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Southern California's Computer Magazine

November 12, 1990 • 76

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MicroTimes™

Another Side of Bill Gates

BY JOHN PERRY BARLOW

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"What do you think about the possibility that Microsoft is going to be the Standard Oil of computing in the 21st century?"

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See story beginning on page 78

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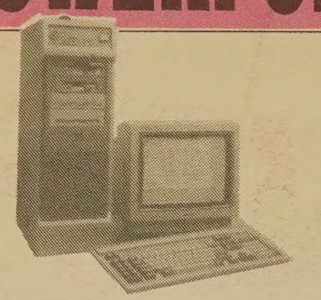

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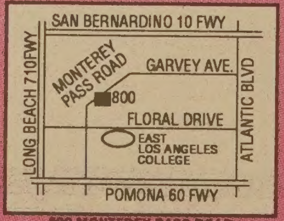

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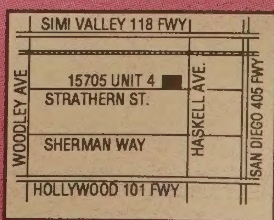

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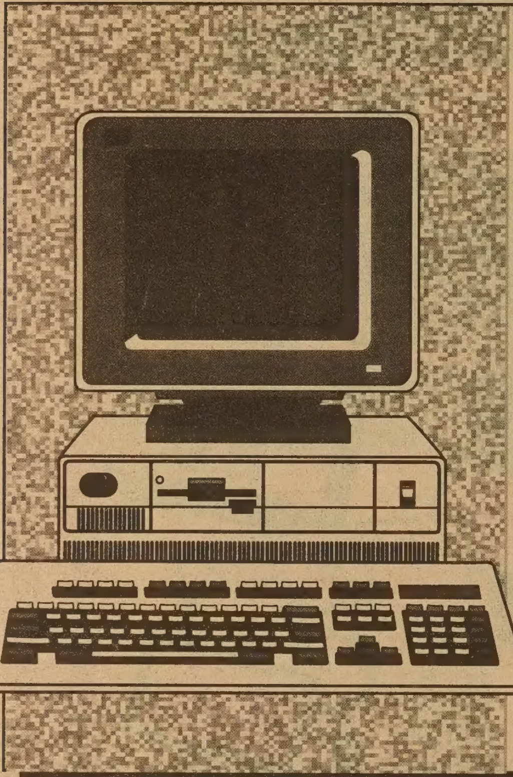

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BIOS	• AMI American MegaTrends, Inc.	• AMI American MegaTrends, Inc.
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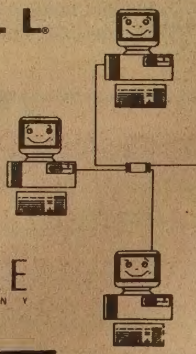

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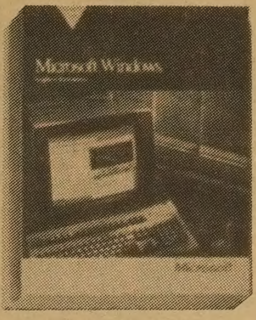

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MICROTIMES™

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When we heard Bill Gates advance the notion that every mind-boggling capability offered by the new NeXTs would soon be available on PC hardware—and hey, you can still run Lotus!—Barlow and I, as hardcore Mac users and major aficionados of cool toys, were a little dubious. Of course, we obviously had a fundamental culture clash with a company that, for example, regarded Command-LeftArrow-Click as an intuitive command for Select All.

However, Gates and Microsoft did not get where they are by misjudging their market or annoying their users or failing to deliver what their customers wanted, as (most recently) the phenomenal success of Windows 3.0 attests.

As for the cool toys—well, who knows what's coming that Gates is only hinting at? For example, Silicon Graphics, purveyors of amazing graphics hardware and a leading light of the UNIX workstation world, recently announced their latest product: IrisVision, a real-time 3D graphics card that delivers most of the capabilities and application support of the Iris workstations—and plugs into an AT or MCA slot. It runs graphics that leave you breathless—under DOS or Windows.

And hey, you can still run Lotus.

—ME

Cover Story
Another Side of Bill Gates 78

By John Perry Barlow
Cover and contents photos: Michael Jay
In which Gates, the chairman, co-founder, and CEO of the most successful and influential software company in the microcomputer industry, meets lyricist, ex-rancher, ex-politician, and journalist-with-an-attitude Barlow. With interesting results.

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Our January issue will feature our fourth annual list of microcomputer industry luminaries, and here's your chance to tell us who should be on it.

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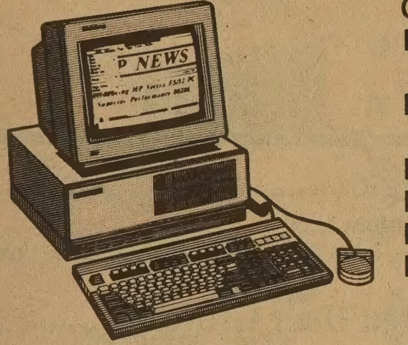

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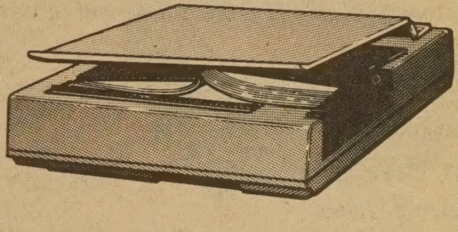

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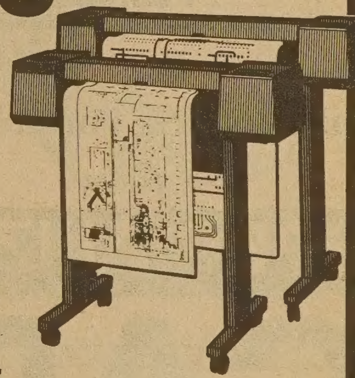

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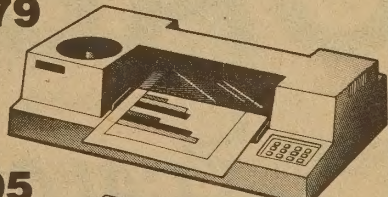

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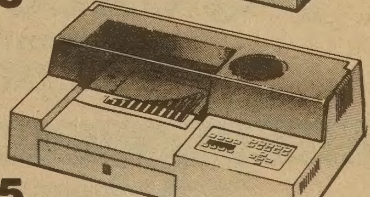

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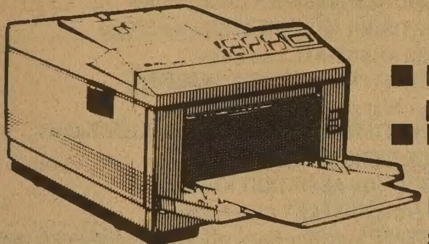

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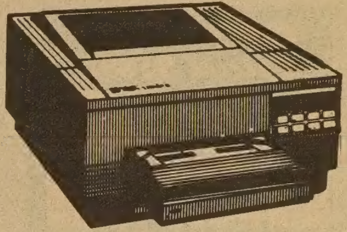

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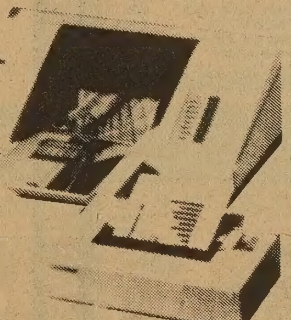

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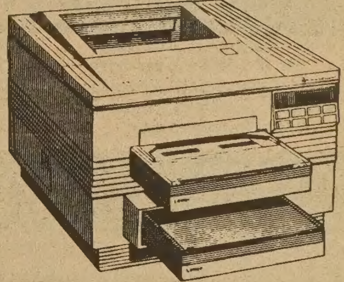

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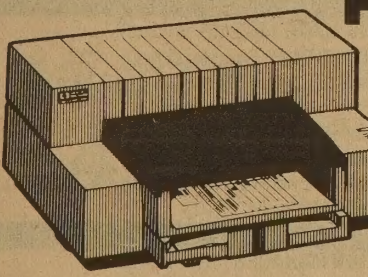

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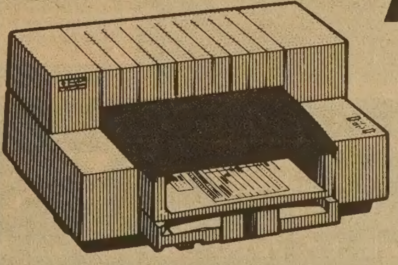

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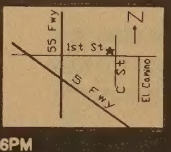

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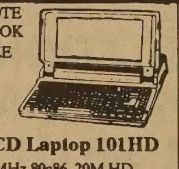

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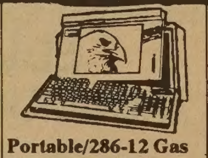

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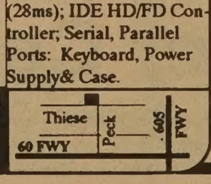

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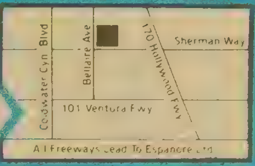

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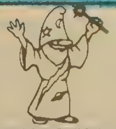

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BY PAUL HOFFMAN

Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman @well) and MCI Mail (264-3171). He also writes popular microcomputer books.

ARBITRATOR FINDS INTEL BREACHED CONTRACT WITH AMD

The arbitrator hired by Intel and AMD to settle their long-running dispute about whether AMD can produce the 80386 chip family was partially settled last month when the former judge hired by the firms ruled that Intel acted in bad faith whenever possible with respect to the contract. The arbitrator, retired Superior Court Judge J. Barton Phelps, took almost three years to hear all of the arguments and to read the voluminous testimony given by AMD and Intel employees.

His ruling will be followed by one determining what damages, if any, AMD should receive from Intel.

The judge was fairly scathing about Intel's ethics with regard to the contract. He said that Intel acted with such bad faith that AMD could not complete its side of the contract. "This action is a classic example of a breach of the covenant of good faith and fair dealing, preaching good faith but practicing duplicity," he commented. Intel did this by finding the maximum fault possible in everything that AMD tried to do to meet its obligations. "Intel's failure to transfer the 8087 as required by the contract was a knowing, deliberate and unjustified breach of contract ordered or approved by the most senior officials at Intel."

Even though the ruling stated that Intel was openly and repeatedly dishonest with AMD from the highest levels of Intel management on down, Intel declared that it won the case because AMD will probably not get much or any damages.

Judge Phelps said that AMD had every right to ask for damages based on the breach of contract. After the initial ruling, Intel said it would appeal any ruling by the arbitrator that awarded AMD rights to the 80386, even though both parties agreed to abide by the arbitrator's rulings.

The contract was originally signed in 1982. At the time, it was common for every major chip company that released an important chip to have a "second source" in case the demand for the chip was too high or something happened to their production facilities. Major clients of the chip manufacturers would demand such second sourcing before they would commit to build systems that used those chips.

This is, in fact, still true for most manufacturers. Intel, by not following through on its contract with AMD, was able to tell client companies that it had a second source and thus get manufacturing commitments while not having to lose any market share to AMD. Because of the success of the PC and the fact that Intel was usually able to keep supply above or even with demand, few of Intel's customers complained when there wasn't a real second source.

PAPERBACK SOFTWARE GIVES UP, STOPS SELLING VP PLANNER

Lotus is one step closer to having the undisputed rights to the 1-2-3 look and feel. Paperback Software, the loser in the copyright case decided in June, announced that it would not appeal the ruling and would pay Lotus $500,000 for violating its copyright. Paperback also said that it would stop selling VP Planner, although it would continue to support its current customers.

If Paperback had appealed the case, a higher judge could have reversed the decisions of Judge Robert Keeton about what is

The VP Planner line contributed more than two thirds of the company's revenue; Paperback may have to declare bankruptcy in the next few months or significantly scale back all of its operations.

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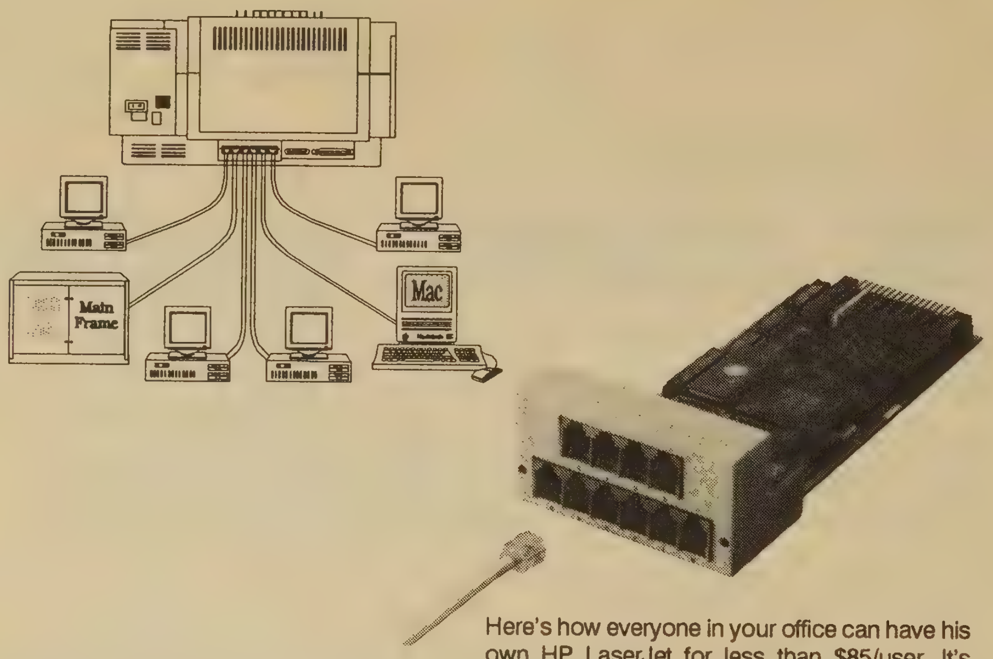

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copyrightable in the Lotus interface. However, pursuing an appeal would probably take years and cost Paperback hundreds of thousands (if not millions) more in lawyer fees.

Paperback decided to bite the bullet and try to survive on its other products and on whatever is left of the good will from its customers. The VP Planner line contributed more than two thirds of the company's revenue, so it is likely that Paperback will have to declare bankruptcy in the next few months or significantly scale back all of its operations.

Paperback's decision not to pursue the appeal does not affect Lotus's suit against Borland and Santa Cruz Operation. Judge Keeton will hear the first bits of those cases later this year. Lotus's case against Mosaic goes to trial as *MicroTimes* goes to press; it is unlikely that Mosaic will fare any better than Paperback, since they are relying on the same arguments that Paperback used, namely that the interface is not copyrightable, particularly when significant functionality is added to the product.

NEW CPUS FOR SMALL, FAST COMPUTERS

AMD and Intel both announced new chip sets that will lead to much smaller notebook (and possibly desktop) computers. The chip sets are CPUs that include the functions normally assigned to dozens of "support chips." By including those functions in the CPU chip, computers need much less space and can run faster.

In addition, both of the new CPUs have features that make battery-operated portables draw less power when the CPU is not in use and thus make the batteries last longer between charges.

AMD was first to announce an integrated CPU, called the 286LX. It's based on a 12- and 16MHz 80C286 CPU, with many of the additional support functions built in. According to the *Microprocessor Report,* the industry magazine for CPU developers, the 286LX has a special mode that stops the CPU's core clock, reducing power consumption by 95%. The chip can save even more memory by stopping all of the other clocks except the DRAM and real-time clock.

About a week later, Intel announced a similar concept based on the 80386SX CPU. Intel's offering is considered to be much more advanced than AMD's and is based on the 80386, meaning that

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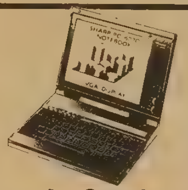

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computers that use it can use more advanced programs. Like AMD's chip, Intel's 386SL has many power-saving features built in specifically to make batteries last longer in laptop computers. It will initially be offered running at 20MHz.

Since AMD's chip is based on the 80286, it is really only useful in "entry-level" computers, not advanced computers that take advantage of the memory management features in the 80386. Thus, AMD priced the 286LX at less than half of Intel's price for the 386SL. Many notebook computer manufacturers will go with the AMD chip due to price, but it is likely that many will also go with the Intel chip so that their computers are more "high end." Since many manufacturers now have lines of notebook computers based on both the 80286 and 80386, companies will become familiar with the advantages and faults of these two chip sets and will decide which to use in the long run.

> Like AMD's chip, Intel's 386SL has many power-saving features built in specifically to make batteries last longer in laptop computers. It will initially be offered running at 20MHz.

Michael Slater, editor of *Microprocessor Report,* used these announcements to make a point about the competition for recognition in the press. Even though AMD announced a week before Intel, Intel's project is much

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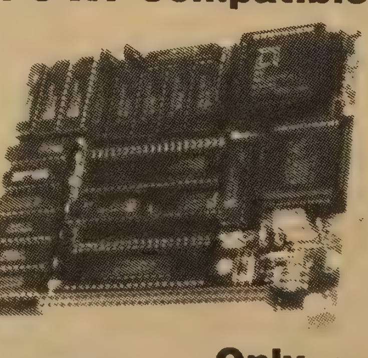

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further ahead than AMD's. Intel has samples now, while AMD will be sampling later this year. Intel also expects volume production three months sooner than AMD.

Slater contrasts the desire for "first of its kind" with "first in the press." Since both of these announcements are for chips that aren't shipping in quantity, the actual availability date is just a guess. "Overall, the microprocessor industry has a very poor record of making production shipments by the date first promised," he comments.

UNIX IN THE NEWS

DEC finally announced that it would support UNIX more fully so that it could compete more aggressively on open system contracts. The announcement allows Ultrix, DEC's version of UNIX, to run at the same time as VMS, DEC's own operating system.

Both DEC and most of its customers claim that VMS is a better operating system but that there are many cases where UNIX is needed for specific tasks. VMS is specifically optimized for the VAX hardware, so similar programs often run significantly faster under VMS. The unification of VMS and Ultrix gives current and future DEC customers many more choices, since the merged operating system will run both types of applications. DEC emphasized that it expected most of its customers to continue using VMS in the future.

•The first version of what might be a significant challenge to UNIX is now being shipped to computer manufacturers for their evaluation. Open Software Foundation finally shipped OSF/1, the second major piece of software from the consortium formed to challenge AT&T's control of the direction of the UNIX marketplace. If OSF/1 turns out to be stable and fast, commercial versions should begin appearing early next year, and it could be a major standard by the beginning of 1992.

THE STATE OF REAL-WORLD NETWORKING: INTEROP '90

Some shows are for end-users, others for volume buyers, others for people who want to see tomorrow's technology. Interop '90 proved to be none of these, mostly due to the field it cov-

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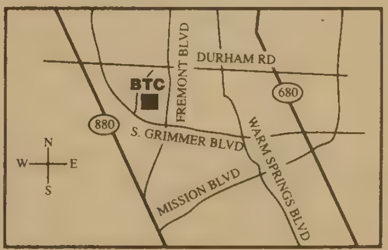

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In the PC world, most people think of networking as hooking together many PCs and Macs on a single network and running software such as Novell's NetWare. If you're lucky, there might be a minicomputer or a gateway to the company's mainframe. In the rest of the computer world, however, PCs are the least of the concerns of network administrators.

> **Networking PCs is relatively easy since PCs can usually all run the same software. "Real world" networking, on the other hand, is much more difficult, since you are usually trying to get different types of computers from different companies to share data.**

Networking PCs is relatively easy since PCs can usually all run the same software. "Real world" networking, on the other hand, is much more difficult, since you are usually trying to get different types of computers from different companies to share data. The hardware and software involved in hooking together larger computers from different manufacturers create a living nightmare. The

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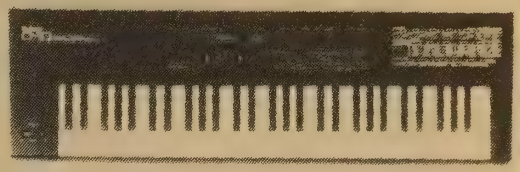

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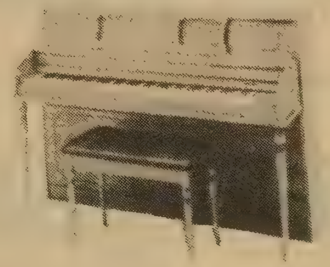

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65 MB	890	1190	1230
80 MB	945	1245	1280

16 Mhz	MGA	VGA	super VGA
20 MB	865	1169	1199
40 MB	920	1225	1255
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80286 mother board, 16bit CPU, 80287 socket - AT case
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16bit FHDC 1:1 - I/O 2ser,par,game - 101 enhanced KB
2 MB ram installed - display controller and monitor.

80386-SX

16 Mhz	MGA	VGA	super VGA
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65 MB	1245	1545	1585
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20 Mhz	MGA	VGA	super VGA
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40 MB	1220	1515	1555
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80 MB	1440	1740	1775

80386SX MBrd, Intel CPU, 80387sx socket - AT case
digital 3led, 2button + PS - 1.2 and 1.44 TEAC FDD
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2 MB ram installed - display controller and monitor.

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25 Mhz	MGA	VGA	super VGA
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80 MB	1630	1930	1980
100 MB	1820	2120	2150
150 MB	1890	2190	2220

25 Mhz 64k cahe	MGA	VGA	super VGA
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annual Interop show is designed to make that nightmare a little less scary.

The attendees at Interop '90 were split fairly evenly between serious network jocks and people from the computer industry who have to work with networking vendors. The companies exhibiting at the show were all over the field: computer manufacturers showing off how well their hardware networks, network hardware and software vendors of all sizes, people selling books and training on how to set up and choose networks, and industry standard organizations.

The last group was the most interesting. For each major network standard, there was a large booth crammed with dozens of hardware and software manufacturers' wares running that standard. There were booths for ISDN, ONC/NFS, FDDI, SMDS, 10BASE-T, SNMP, and a central booth that had connections between all of the above. (The networking world is more rife with strange acronyms than any other part of the computer industry; fortunately, they were handing out "The Interop Pocket Glossary of Networking Terms"...) If you were interested in a particular type of networking, you could go to a single booth and get information about all of the vendors at once.

Some of the people running the standards booths understood how dry the material was and lightened it up. For example, 10BASE-T is a hardware specification for a 10-megabit-per-second LAN system based on phone wire. To show how resilient the cabling system is, the booth had a "network hell" which consisted of cables wrapped around traditional noise sources, such as an old electric motor and flaky fluorescent light fixtures. The network still ran fine, even though there were a huge number of electrical spikes.

Interop '90 showed that competition in the networking market is not a terribly effective way to set standards. Going from booth to booth, you had to keep asking the salespeople, "What do you support and what do you not?" Because these companies are as honest as the rest of the computer industry, you usually had to follow that with, "No, really: what do you have shipping *today* and what is simply announced?"

The other sad fact that was evident from walking the floor is that networking "solutions" don't always work well together. In almost every large booth, at least one computer or terminal was down due to networking problems. Some of these were the systems connected to the main show network, but others were connected to that manufacturer's own wares in the booth. To be sure, most things worked well, but it was very disconcerting to see so many non-working systems with technicians furiously trying to fix them. ■

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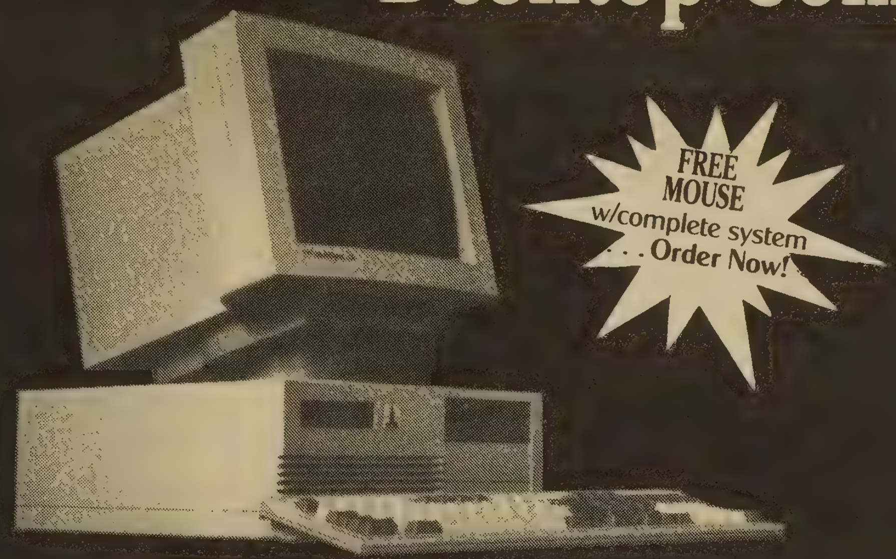

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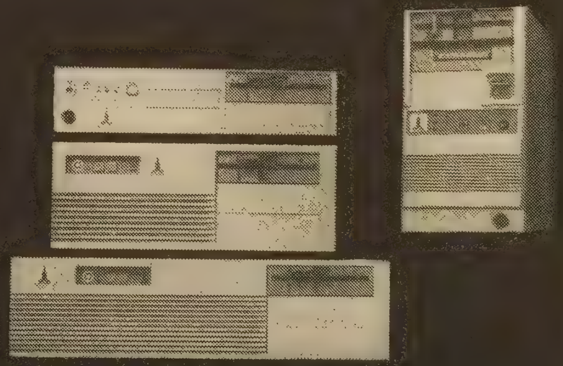

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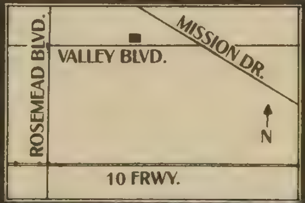

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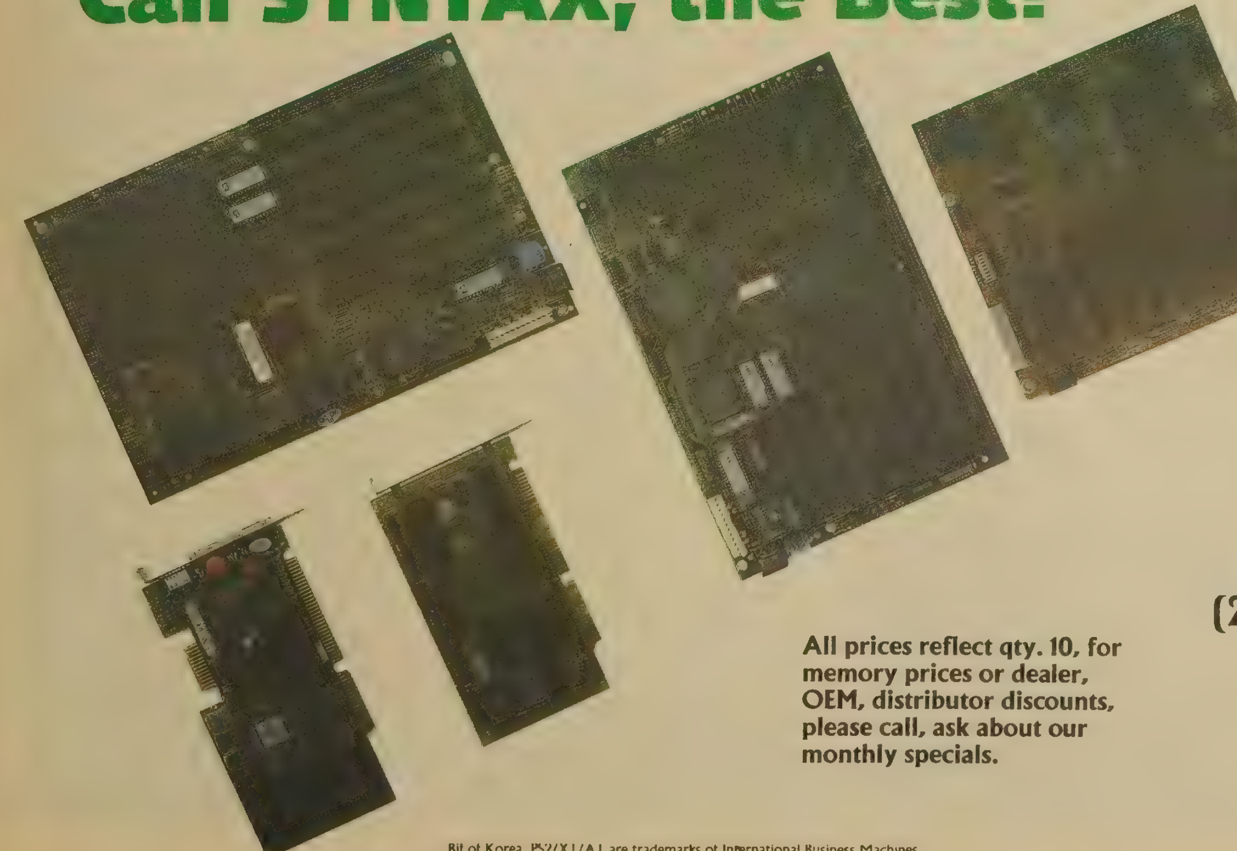

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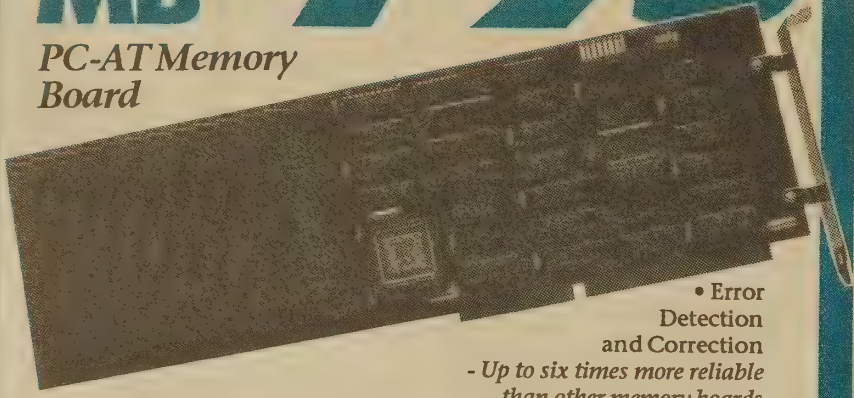

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HIGH TECH NEWS FROM JAPAN

Whether it's the latest color printing technology, a faster processor, or handwriting-input portables, the Japanese computer industry has an important and often complex relationship to its US counterpart. And whether your interests lean to international markets or you just want a preview of products we'll eventually be seeing here, you'll make more intelligent decisions if you're aware of current developments.

Beginning this issue, MicroTimes *will feature a selection of news from the Japan Marketing Group. JMG offers its subscribers an extensive weekly news digest covering products and events in the Japanese computer industry, and we're happy to have the opportunity to make some of this information available to* MicroTimes *readers. (Japan Marketing Group, 400 Groveland Ave. Suite 312, Minneapolis, MN 55403, 612/871-7889.)*

•Canon announced a floppy disk drive, the FV-540, that will read the 2.5" video floppy disks used by Canon and Sony still video cameras. The drive hooks through a SCSI port to a Mac II and can transfer pictures at very high speeds. The price is $2,200.

•Hitachi introduced notebook word processors called "With Me" to the student and young professional markets. The battery-powered PCs are lightweight and come in pink, green, and gray. They cost $1,400.

•NEC announced that it's opening a PC production plant in West Germany in 1992 to serve the European market. The plant will help NEC overcome not-built-in-EC tariffs scheduled to take effect in 1992. NEC also announced that it will begin selling and servicing its PCs in East Germany soon.

•Nippon Steel will start selling AT clones in the US in November. It will sell both 80286- and 80386SX-based laptop PCs under the LIBREX trade name. The PCs will be first manufactured in the US by an independent company and later by Nippon Steel.

•Kinokuniya, the huge Japanese bookstore chain, announced a new database available on NEC's nationwide network. The database holds data on 260,000 people, 140,000 books, and 750,000 articles. Accessing the database costs $1.50 per minute.

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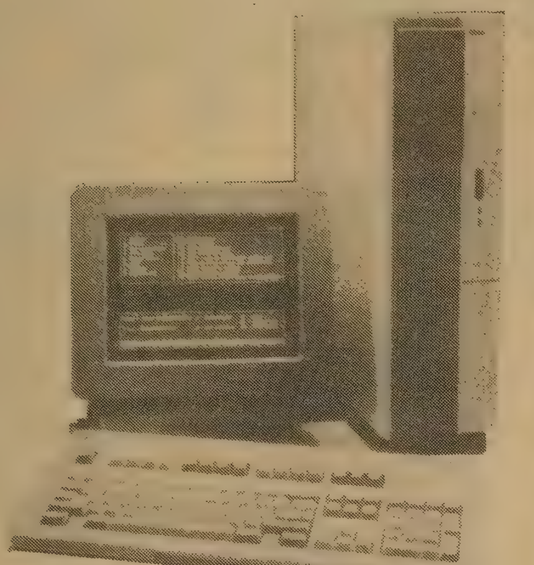

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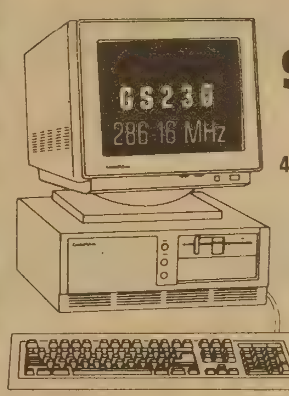

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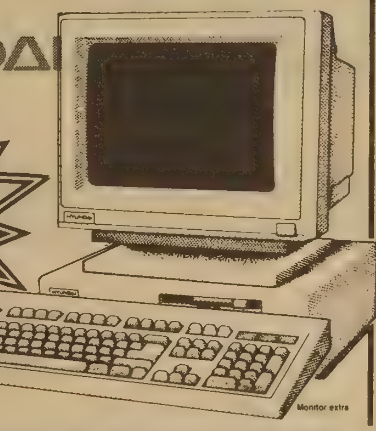

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Controlling What Computers Read

BY JIM WARREN

REALIZABLE FANTASIES

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Jim Warren founded InfoWorld, *the DataCast proposal for broadcast-based paperless electronic newspapers, Video Initiative, Wireless Digital, Initiative, Inc. and one of the nation's largest public microcomputer conventions. He was founding host of PBS television's "Computer Chronicles" series, founding editor of* Dr. Dobb's Journal, *founding president of the Microcomputer Industry Trade Association and has chaired various computer professionals' organizations. He holds graduate degrees in computing (Stanford), medical information science (UC Medical Center), and mathematics.*

This column considers futures for fun and profit—viable techno-tools that remain fantasies only because you haven't yet produced 'em. And it reviews a Congressional report, provocative for our future. Go get 'em—both of 'em!

BEFORE RECOGNITION

Optical character recognition (OCR) programs are becoming really viable for rapid input of typed and printed materials. (I've been delighted with Caere's unusually robust OmniPage, scanning through an Abaton 300/GS—though I've not yet tried their strongest competitors. Of course, I'm using a Mac, and of course I want more, more, more—the essence of this column.)

Diverse, maximum-utility image-processing systems need some specialized tools to apply to the digitized scanned image before attempting text recognition—tools designed to work with, and as an integrated part of, the OCR system.

They should work after a bit-map, grayscale or color image has been input from the scanner, and *before* character recognition begins. [Note: Many OCR packages, such as OmniPage, automatically draw boxes around what they perceive to be logical sections of text and other images, then allow the user to select scanning sequence.]

DRAWN & QUARTERED

Users should be able to delete some or all of the boxes proposed by the OCR pre-scan. Further, they should be able to draw their own arbitrary polygons in the digitized image by pointing and clicking. (A computer is obsolete and inadequate if it has no pixel-level pointing device—a mouse, trackball, etc. No, arrow-keys are not adequate substitutes. But, of course, I'm not opinionated...)

Such polygons should be permitted any angles and any shapes —not limited to rectangles, and certainly not limited to horizontal and vertical edges. At any time, the user should be able to zoom in and out, even when creating the polygons.

One user option for zooming should be to have the result centered on the screen at the point in the image where the pointer was located before the zoom command—as is common in painting and drawing programs.

Minimum zoom resolution should display at least the entire scanned image. Maximum resolution should make it easy to select individual pixels with the pointer, regardless of the scanner's resolution (usually 300 dpi—dots-per-inch). There should be a reasonable number of steps between min and max—certainly more than two or three, inclusive. Basic pixel and area editing—i.e., painting—tools should be available, allowing cleanup of imperfect scanned images.

VIRTUAL VEGIMATIC

After drawing any polygon, the user should be able to select it or any other polygon. A selected polygon could be entirely cut out of the digitized image, like clipping it out of the original document. Or it might be marked for specialized non-OCR processing—marked and processed as a table or graph (several kinds) or line-art or half-tone or grayscale or color or photo image. (Note that graph recognition—preferably feeding into a spreadsheet—is a major fantasy, all unto itself.)

Users should be able to replace the bits in any polygon—including an empty one—by typing bit-images of text. Of course, they should be able to specify the font(s), faces, sizes and justification for the text they type, as is usual in adequate text editors.

The option of replacing or adding text allows users to add their own comments—"marginal notes"—as they choose, and allows them to clean up text that the OCR software might find dirty and difficult to recognize.

Only after the user makes these configurations as desired should OCR begin.

There's one more important pre-scanning option users ought to have. Remember that OCR programs make default decisions about which areas of text to scan in what sequence.

The user should be able to override the default scanning sequence by clicking on the

Users should be able to delete some or all of the boxes proposed by the OCR pre-scan. Further, they should be able to draw their own arbitrary polygons in the digitized image by pointing and clicking.

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desired polygons in the user-configured scanning sequence. This includes omitting some polygons which might contain interesting images that aren't text, or text the user doesn't want scanned, but nonetheless are worth retaining as part of the image-file.

That's all there is to it—before OCR. In the "Files After OCR", there's a whole other mound of techno-turf awaiting ever more robust landscaping by entrepreneurial toolmakers.

UNRELATED BITS

•MIT's Media Lab in Cambridge, MA is offering some really exciting, innovative proposals—and prototypes—for HDTV and "teleputers," integrating full-fledged computers with high-definition video/television. So why does MIT have no prominent counterpart at Stanford, UC Berkeley, UCLA, or Cal Tech? Is it too many defense contracts, or too many tenure-protected posteriors resting on their theoretical laurels while sneering at significant *pragmatic* "contributions to knowledge"?

•Tovar has suggested that a Software Writers' Guild (like the Screen Writers & Actors' Guild) might offer such things as beta-testing, hardware feedback and legal insurance with guidelines. Hmmm—how about some "bulk-rate" legal insurance for programmers, to pursue some much-needed class-action cases against big-company repression?

•Someone asked: Should *MicroTimes* have a "Personals" section? They preferred that their proposal be published without attribution.

•Been meanin' to praise this for months: It's really nice that Farallon, in dealing with a proliferation of PhoneNet clones, did not pugnaciously launch a legal missile. Instead, they just sent a polite, common-sense letter offering reasonable licensing agreements, and most of the companies involved took them up on it. Neat! [For details, see the Industry Insight section of the May issue of *MicroTimes*.]

WHERE'S CONGRESS GOING?

As interesting for its emphasis as its content, Congress's Office of Technology Assessment (OTA) issued a Special Report: "Science, Technology and the First Amendment." That's the one telling Congress not to abridge freedom of speech, press, peaceable assembly, or right to petition Government to redress grievances. (OTA-CIT-369; dated January 1988.)

Now, what specific technology would *you* mention first in such a report? Electronic speech or email? Electronic press via global networking? Assembly via computer teleconferencing? Access to computerized government files to allow informed redress of grievances? Congress's technical futurists had a different emphasis.

OTA began: "Science and technology may affect the balance between First Amendment rights and government interest by changing power relationships." The first mention of specific technology—except the printing press—began: "Information and communications technologies, such as sat-

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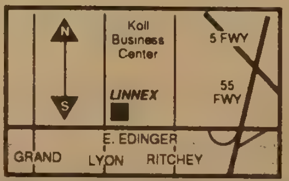

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ellites, computers and digital transmission lines...change [how] we communicate ideas...and incitements to action—they affect who can say what, to whom, to how many, and at what cost. ...With these changes will come new First Amendment challenges to the power of the government to regulate access to and ownership of communications media."

The first two photos were of the Franklin printing press and a communications satellite. The first chapter concerned news gathering. It highlighted "... pitting freedom of the press against privacy rights and national security interests...," and discussed press use of networked databases for researching, investigating, and "drawing out latent connections between people and events..."

Next was an entire section on "media satellites," stating, "... [Some] believe that the press will soon want to own and operate their own remote sensing systems dedicated to newsgathering..."

The section thereafter, captioned "Implications for Privacy," *only* dealt with the press infringing personal privacy and organizations' confidentiality, with "Implications for National Security" being the next section. There was lots more.

As I said, emphasis was as interesting as content. Curiously, no more copies of this 1988 report seem to be available—either from OTA or the Government Printing Office (GPO).

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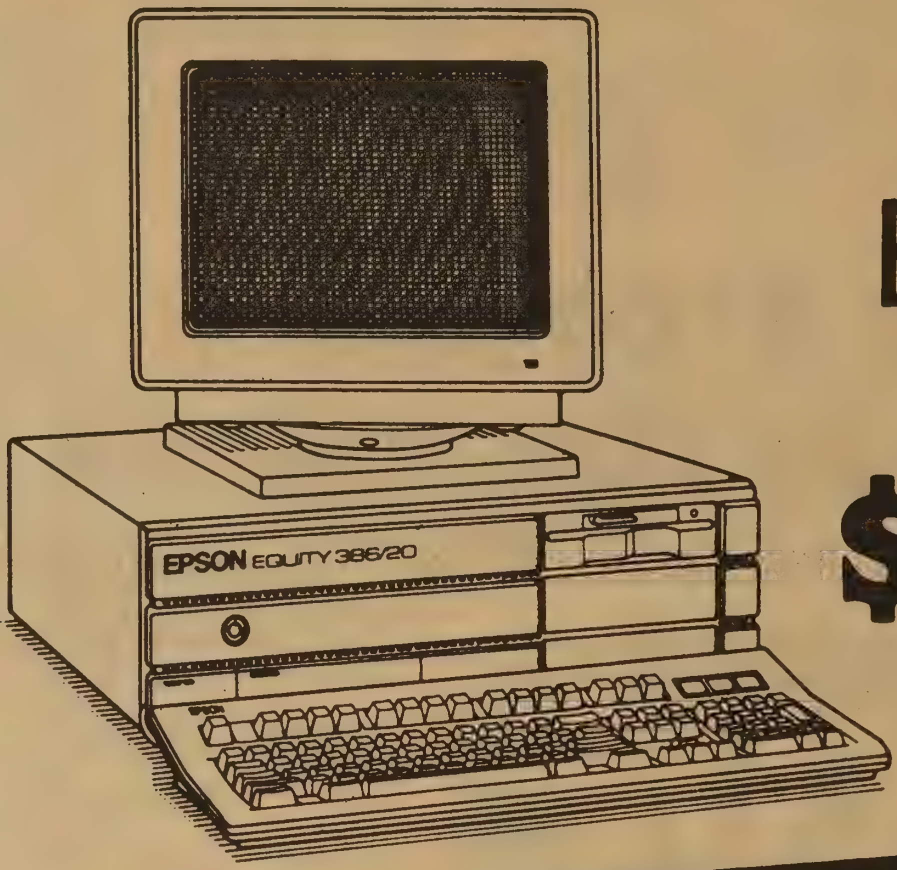

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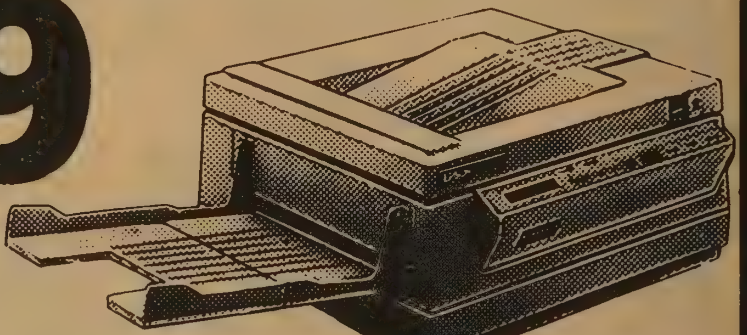

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Choosing Accounting Software By The Module

Information To Help You Decide What You Really Need

BY MARGARET WRIGHT

You've decided to upgrade to a sophisticated accounting package, one that will do the job right. However, when your consultant/salesperson starts talking about all the different modules you'll need, you find yourself wondering, "Do I *really* need all those modules? Couldn't I get by with less?"

Almost all high-end—i.e., reasonably sophisticated, fairly flexible, and priced accordingly—accounting software is sold by module. Most packages are made up of 10-12 modules, each costing approximately $800. Depending on your needs, you may purchase one module, a combination of several, or all of them.

Since the cost of software can add up in a hurry, it's important to have an accurate sense of your needs before you go shopping. Just as there's no point in spending money on modules you don't really need, there's also no point in spending several thousand dollars for a few modules, only to neglect the one that will really make a difference in your operation. This article seeks to demystify what each accounting module does so that you can be a more informed consumer.

Although there's considerable variance in the strengths and weaknesses of particular packages, all of them consist of roughly the same modules with similar functions. (However, the way in which the modules interact varies considerably from package to package.)

GENERAL LEDGER

A general ledger module allows you to set up your accounts and post transactions to them. It will generate such reports as a chart of accounts, a trial balance, and basic financial statements.

ACCOUNTS RECEIVABLE

The accounts receivable module manages information about your customers. All accounts receivable modules have a screen for you to input your customers' names and addresses. Cash receipts and sales may be entered here if you are not using an order entry module.

You can use the accounts receivable module to access information about individual customers, such as the customer's current balance. Month-end routines in accounts receivable will provide aged customer balances and monthly statements to customers.

ORDER ENTRY

Many accounting software products require an order entry module in order to generate invoices for each customer transaction. If you use an order entry module in conjunction with an accounts receivable module, you'll enter sales transactions through this module.

An order entry module is also necessary if you want to generate detailed information about product sales—for example, the quantity of a given item sold during the month.

The order entry module will also generate information about gross profit by item, cost of sales by item, sales by salesperson, etc.

ACCOUNTS PAYABLE

The accounts payable module manages all information about your suppliers—e.g., their names, addresses, and phone numbers, and how much you owe them.

This module is used for recording cash disbursements. Most software allows you to create both manual and computer-generated checks.

Accounts Payable can also generate reports including payments due, cash requirements, cash disbursements, an accounts payable ageing, and vendor information.

INVENTORY

Often people think they want an inventory module and nothing else. However, when they start to enumerate everything they want the software to do, they quickly move beyond the scope of a typical inventory module.

For the most part, inventory modules allow you to increase inventory, decrease in-

> **The payroll module is particularly useful in conjunction with the job cost module. Using the two together will allow you to enter your payroll expenses and simultaneously designate which job they should be assigned to, so the data doesn't have to be entered twice.**

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Margaret Wright is an Account Manager with SymPro, Inc. She may be reached at (415)865-0600.

ventory, and move inventory between different locations. How they do these tasks depends on what additional modules you're using.

Typical inventory modules can generate purchase reports, stock reports, turnover analysis, transfers listings, mass price update reports, and valuation reports indicating the quantity and price of each item entered into and removed from inventory.

BILL OF MATERIALS

Not all vendors offer this module. Great Plains, for example, incorporates some bill-of-materials functions in its inventory module, whereas ACCPAC Plus, Macola, and MAS90 have separate high-powered bill of materials modules.

A bill of materials module allows you to keep track of some "processing" without giving you full manufacturing capabilities. Say that A and B are component parts that make up the finished product C. You want to keep track of all these items on hand, and assign some labor and overhead costs to product C. A bill of materials will allow you to do this.

It will not, however, keep track of partially finished goods. If you need to keep track of work-in-progress inventories, you need a more sophisticated manufacturing package.

PURCHASE ORDER

Many people assume, inaccurately, that the information provided by a purchase order module is included in the inventory module. For the most part, the inventory module only lets you increase, decrease, and move inventory.

The purchase order module, on the other hand, allows you to keep track of materials that have been ordered. You can get reports to inform you about such things as the status of outstanding purchase orders (including whether a particular order has been partially filled), when shipments are expected, which shipments are overdue, and what's been received.

JOB COST

The job cost module is useful for businesses that bid on jobs and track costs by the job. Construction is one obvious example, but engineering, architectural, and accounting firms also use some job cost modules.

A job cost module lets you create an estimate for a job, transfer the estimate to an actual job, enter the costs for that job, and generate various reports giving detailed information about specific jobs, or more summarized reports on all jobs.

PAYROLL

A payroll module keeps track of all payments made to an individual as well as all payroll deductions and expenses, vacations, etc. It also keeps track of personnel information.

The payroll module is particularly useful in conjunction with the job cost module. Using the two together will allow you to enter your payroll expenses and simultaneously designate which job they should be assigned to, so the data doesn't have to be entered twice.

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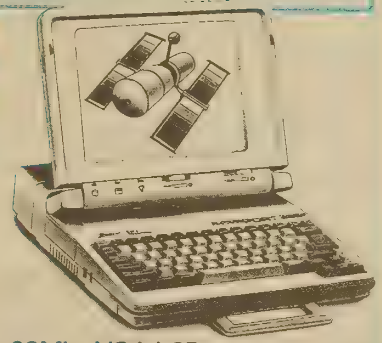

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Plus, Solomon, Macola, and Great Plains, have separate report writers.

Most of the modules we've already mentioned generate standard reports; while they vary from package to package, they cannot themselves be changed.

A report writer allows the user tremendous additional flexibility in designing specialized reports. It lets you take almost any information generated by any module in the system and sort it however you want. This is particularly useful if you want to combine information from several modules into a single report.

IMPORT/EXPORT MODULES

Some packages have modules that allow you to input information that's already in machine readable form. For example, if you have a marketing information system in place that generates information about potential customers, and you want to be able to tell your marketing software to pass the information about potential customers who become actual customers to the accounts receivable module without having to enter it all from scratch, you'd use an import module.

An export module does the same thing in the other direction. If you want to take information from your inventory module, for example, and send it to a Lotus or Excel spreadsheet for analysis, you might use an export module. Many packages include this function with other utilities rather than offering a separate module.

SYSTEM MANAGER

There's considerable variation from package to package as to whether system manager functions are included with other modules or sold separately. These functions generally include a shell or utilities to perform such tasks as setting up additional companies, changing the date, maintaining security, and possibly posting transactions.

If you're running on a network (as opposed to a single DOS machine) you may need to purchase a separate network module. ■

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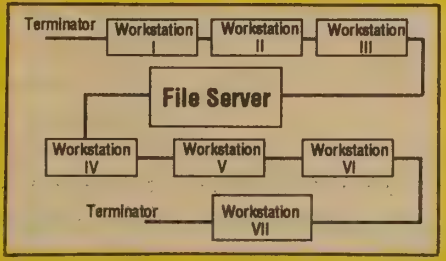

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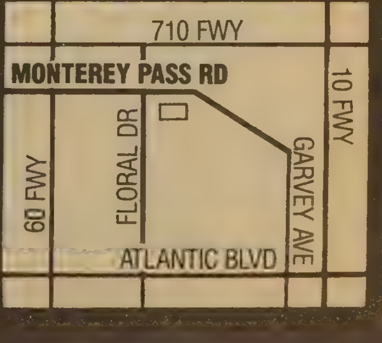

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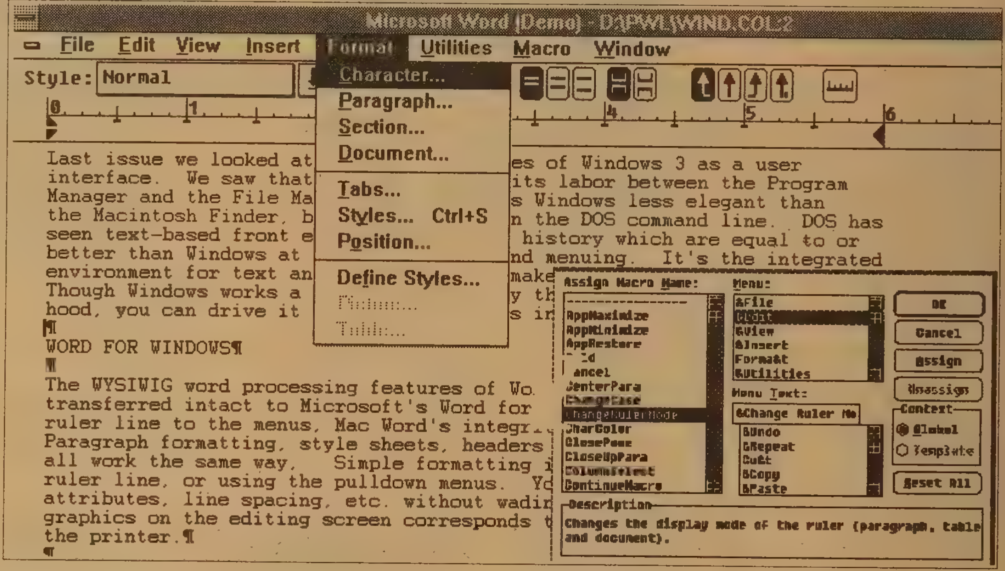
Applications For The Windows Office

Word Processing, Telecommunications and More

BY LENNY BAILES

Last issue we looked at the basic features of Windows 3 as a user interface. We saw that Windows divides its labor between the Program Manager and the File Manager. This makes Windows less elegant than the Macintosh Finder, but friendlier than the DOS command line.

DOS has seen text-based front ends over its long history which equal or beat Windows at file management and menuing. The integrated environment for text and graphics is what makes Windows worth having. Though Windows works differently from the Macintosh under the hood, you can drive to the same places in the applications.



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WORD FOR WINDOWS¶
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Paragraph formatting, style sheets, headers
all work the same way.  Simple formatting i
ruler line, or using the pulldown menus.  Yo
attributes, line spacing, etc. without wadin
graphics on the editing screen corresponds t
the printer.¶
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Changes the display mode of the ruler (paragraph, table and document).

Word for Windows has an interface similar to Word on the Macintosh. All Winword commands can become macros or menu choices.

WORD FOR WINDOWS

The WYSIWYG word processing features of Word 4 on the Mac have been transferred intact to Microsoft's Word for Windows. From the ruler line to the menus, Mac Word's integrity has been preserved. Paragraph formatting, style sheets, headers and footers, page and outline view—all work the same way. Simple formatting gets done by clicking on the ruler line, or using the pull-down menus. You can change fonts, styles, text attributes, line spacing, etc. without wading through submenus. Text and graphics on the editing screen correspond to what comes out of the printer.

Users of Mac Word and text-based PC Word should adapt easily to WinWord's enriched environment. Mac users might be surprised at the additional functionality in a familiar interface. Pull down the File Menu, and you find previously edited documents listed at the bottom. You can reload a document or switch files without using the **Open** command. WinWord also offers a built-in thesaurus, index generation, and automatic document comparison.

Hardcore PC users will be pleased with the powerful macro language. Any WinWord command or combination of commands can be assigned to a keystroke sequence, or installed on a menu. As with Mac Word, you can customize or completely rearrange all of the pull-down menu options.

WinWord can import graphic images from the clipboard, or read EPS, AutoCAD, HPGL, Lotus PIC, TIFF, and PCX files directly. Excel spreadsheets can be imported as tables which are automatically updated when you update the source data in Excel.

The table feature is more powerful on the PC than on the Mac. WinWord can read from tab-delimited or comma-delimited text, or directly import an Excel worksheet. Ranges of cells, rows and columns can be inserted, deleted or merged. Tables can be converted to or from paragraph, tab-delimited, or comma- delimited formats. Automatic tools can put custom borders around your tables.

WinWord reads and writes the more common word processing formats, including Word 5, WordStar, MultiMate, IBM DisplayWriter and WordPerfect 5.0. WinWord v1.1 also writes files for Macintosh Word 4.0.

WinWord's speed and stability appear to be satisfactory on my 12MHz 286 AT. According to reports on the FIDOnet Windows Conference, some users have had difficulty getting screen fonts to display reliably. I noticed a minor problem when shifting from Draft View to Page View. Occasionally, the specific document font was replaced by the generic Windows system font. The correct font reappeared on my system after I did a page preview and returned to Draft View. Microsoft has issued a maintenance upgrade, v1.1, which is said to address this problem.

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Lenny Bailes is a teacher in the Bay Area. He has been writing about personal computers since 1987. He does PC and Macintosh consulting and product testing and can be reached on The WELL (415/332-6106) as "jroe" or at (415)285-6232.

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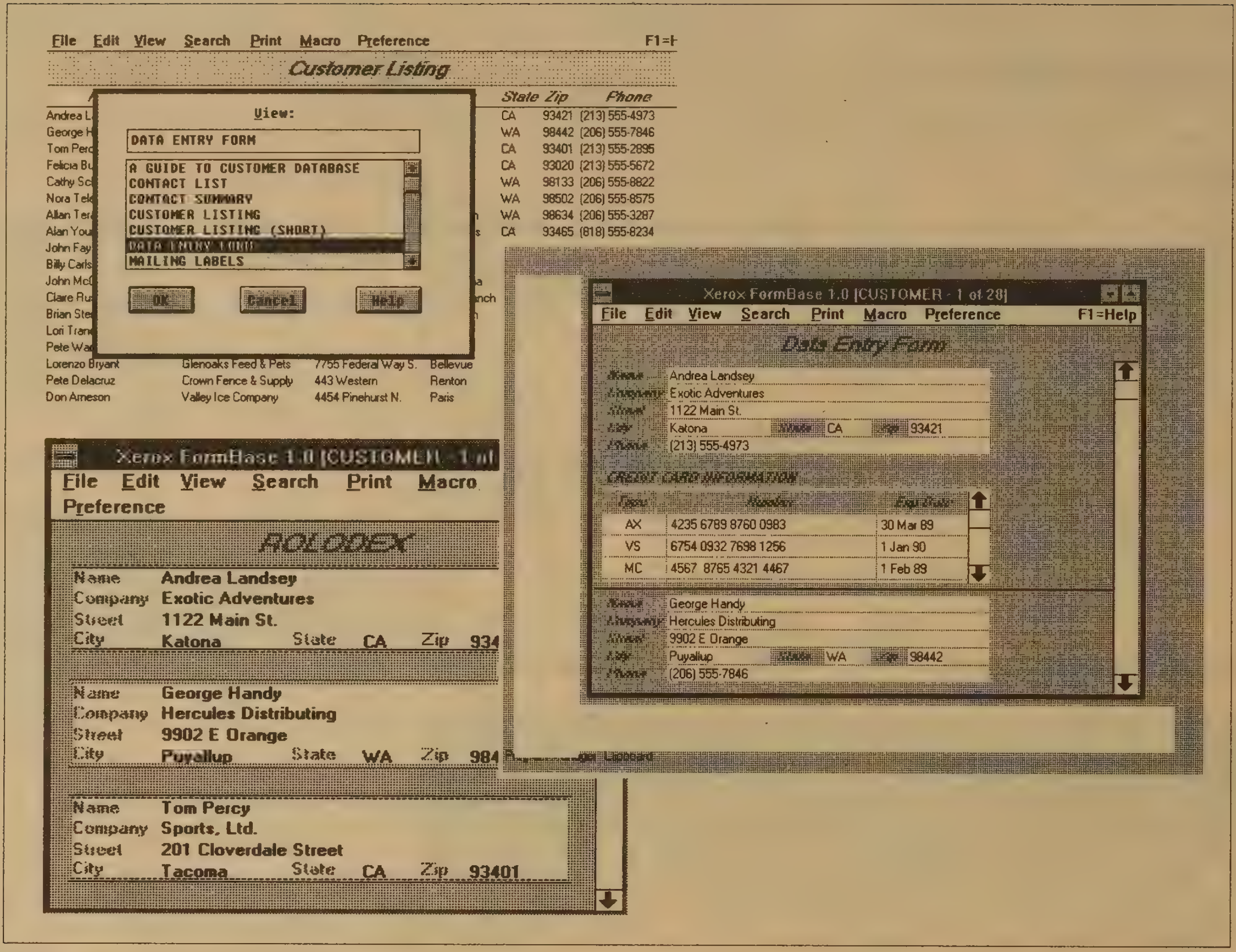
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With Xerox Formbase, each form is a different database "view"

Word for Windows is the strongest argument I've seen for starting an all-Windows office. Mouse editing and feature depth are combined in a package that's fun to use. For this program, at least, the wedding of the Mac-like interface to PC macro power is a big success.

XEROX FORMBASE

A typical business will often use the same data over and over again for customer information records. The same names, addresses and billing data get entered for internal accounting, customer invoices, shipping forms, letters, and reports.

Frank Mahdavi had a vision. Why should users have to copy information over and over again from form to form? Why fudge multiple databases with import and export into word processing and desktop publishing programs? Why not have one intelligent, relational database pop information on the fly into graphic-based form templates?

Mahdavi's Formbase frees users from the drudgery of importing spreadsheet and database files into multiple programs for everyday publishing chores. Like FileMaker on the Macintosh, it allows for easy screen-based layout of forms and charts with multiple fonts and graphic images. You type in the name of a new field, and a box pops up on your form. You can move, resize and change fonts in a field, and the data reformats to fit. You can cut and paste fields or groups of fields from form to form, building a custom library of invoices, customer notices and mailing labels. All of the forms can share the same company logo, address fields or billing data.

Since Formbase accepts scanned TIFF images, you can use it to create personnel records which include photographs. (The Formbase demo disk shows a series of student record templates for a university. Transcripts, registration and enrollment forms repeat the same information. With Formbase, one database can be poured into all of these separate administrative forms.)

Formbase is a powerful database manager. It has a full set of sort and filter options to locate fields, spawn new databases and generate reports. All of the math functions on a standard calculator are included for field arithmetic. The forms you produce are just different views of your database. Context-sensitive help is available for any command within the pull-down menus. You can also attach custom help messages to a specific field. This lets a manager set Formbase up as a simple data-entry tool for beginning users.

Formbase imports/exports 1-2-3, Excel and dBASE III-IV files in their native formats. Other databases can be pasted in through the clipboard. (Scrapbook+, also reviewed in this article, allows data to be copied to the Windows Clipboard in comma-delimited or SYLK formats. The format is preserved when the clipboard is saved to disk.)

Version 1.0 of Formbase works only in Windows' Real Mode. V1.1 is fully compatible with Windows 3. Documentation for the program includes both reference and user training manuals. The documentation is thorough and readable.

There's a lot of power here, hiding under the menus. You won't learn everything overnight, but you should be able to get started quickly. The program includes forty-eight form templates and a sample graphics library. All that's needed for the next version is support for Windows' Dynamic Data Exchange. This would provide hot links between Formbase and Excel/Word for Windows documents.

XEROX VENTURA PUBLISHER

The Windows version of this popular application may be good news to users trying to build a "solid Windows office." Ventura Software has ported 99.5% of the GEM-based program into the Windows environment.

The pull-down menu structure is mostly unchanged. VP for Windows reads and writes files which are compatible with the 2.0 and 3.0 GEM versions, the OS/2 version and the soon-to-be-released Macintosh version.

As a user of the GEM-based Ventura, I initially found the Windows version slightly slower, and less aesthetically appealing. The new "floating toolbox" and "file list" boxes obscure more text in facing pages view. You can't change text anymore by clicking on attributes with the editing tool.

But these are minor points. One could argue the other way: The Windows version offers keyboard shortcuts for most pull-down menu options. The toolbox and file list can be hidden or popped up with two quick keystrokes. The Windows macro recorder lets you preserve other menu combinations or mouse movements. Under Windows, Ventura's context-sensitive help is also greatly expanded. Twice as much information on each menu option pops up when you request it.

Ventura is still definitely Ventura. The program is known for its flexible stylesheets and ease of use with large documents. PageMaker users won't see any decrease in speed, and they might like Ventura's added text control, automatic footnotes, indexing, and page

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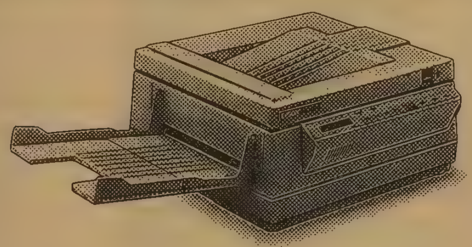

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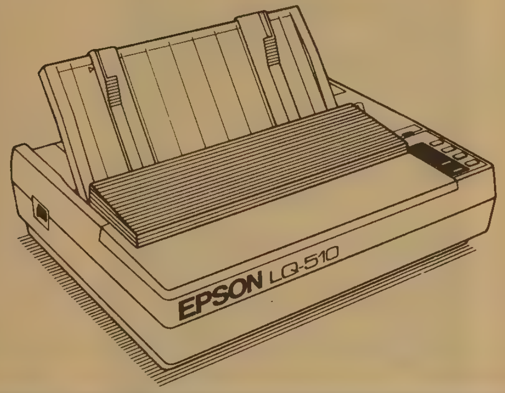

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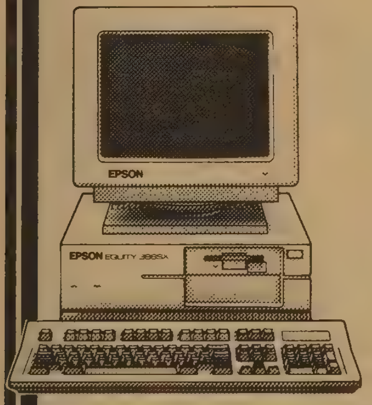

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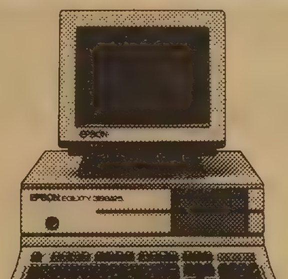

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numbering. (Surprisingly, Xerox didn't emulate PageMaker's ability to run multiple sessions under Windows. You can only open one document in Ventura, unless you have the OS/2 version.)

Ventura for Windows is a significant upgrade for users of the VP 2.0 base product. It integrates all of the features formerly found in VP Professional Extension. These include the equation editor, table module and support for vertical page justification.

If you already use the Professional Extension, you'll find that there are no significant feature additions in the upgrade to Version 3. Footnotes can now flow from page to page, and some 2.0 internal bugs have been removed. Both GEM and Windows Ventura now include built-in network support for Novell and LANtastic.

Users of Mac Word and text-based PC Word should adapt easily to the enriched environment of Word for Windows. Mac users might be surprised at the additional functionality in a familiar interface.

Running Ventura under Windows allows you partial use of the Windows clipboard. You can cut and paste text or vector artwork from other Windows applications. Ventura doesn't currently allow bitmapped art to be transferred through the clipboard. Instead, you can paste the art into Windows Paintbrush and save it in PC Paintbrush format. Ventura can read PC Paintbrush files through its import filters. Ventura does allow style tags to be copied to the clipboard. This lets you cut and paste tags between style sheets for different documents.

Ventura for Windows comes with a Bitstream Fontware kit, which will generate Dutch and Times Roman printer and screen fonts. You should do this right away. The default Windows fonts look like chicken scratches in Ventura's full page view. The Fontware replacements are better.

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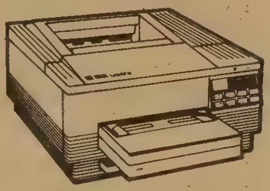

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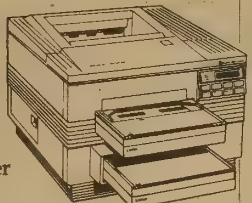

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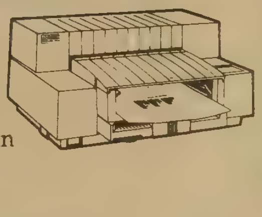

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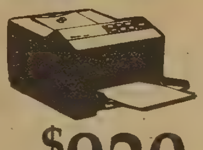

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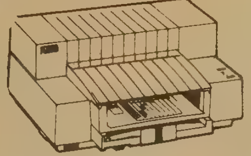

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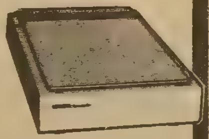

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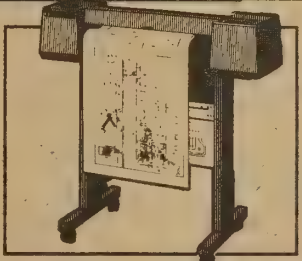

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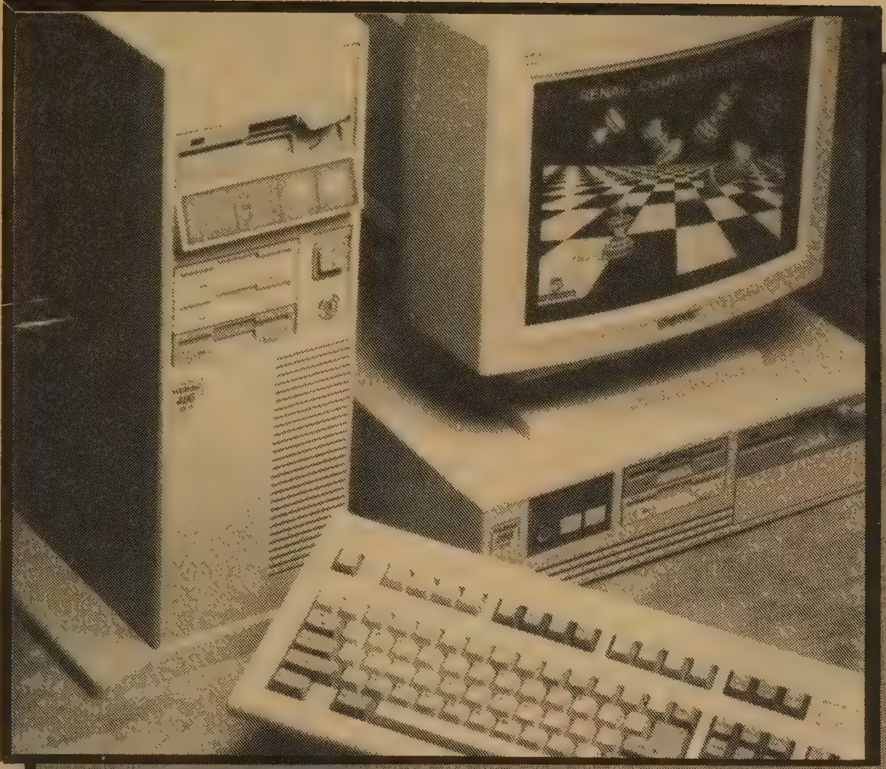
Bitstream and several other companies are doing some amazing things with on-the-fly font production from scalable outlines. Face Lift is Bitstream's add-on utility which frees up hard disk storage space by generating requested fonts as you print. Adobe's Type Manager, MicroLogic's More Fonts and Zenographics' SuperPrint do the same trick.

The worst drawback to Ventura for Windows is its slower print time on PostScript and HP compatible printers. VP 2.0 under GEM took about two minutes to print a complicated chapter on my 512K LaserJet II. VP for Windows took seven minutes, and was unable to print the entire page, presumably due to the LaserJet's limited memory. The chapter came out intact on the LaserWriter II NTX, but with a corresponding decrease in speed. You can do better on print time with Windows with the addition of custom-designed disk cache and spooler programs. At the recent Seybold Conference I saw Ventura for Windows with Zenographics' SuperPrint installed. With this configuration, the same chapter made it through an HP DeskJet + in a little over 3 1/2 minutes.

> **Word for Windows is the strongest argument I've seen for starting an all-Windows office. Mouse editing and feature depth are combined in a package that's fun to use. For this program, at least, the wedding of the Mac-like interface to PC macro power is a big success.**

If you're a full-time graphic artist and work exclusively in the Windows environment, VP for Windows may be a reasonable choice for you. If you want to run Ventura in a multitasking environment with other DOS applications, the GEM version and a 386 work just as easily. (The GEM Ventura can be opened under Windows as a DOS applica-



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tion.) Upgrade for registered users of VP 2.0 to the Windows version is $195. Upgrade from the Professional Extension to the new GEM version is only $80.

More than other Windows 3 applications, VP for Windows requires a powerful hardware base. Plan on a minimum of 4MB of add-on memory, and nothing less than a 20MHz 386 if you want the program to run smoothly.

SCRAPBOOK+

Scrapbook+ enhances the Windows clipboard by letting you save or display custom image libraries. You can select text, bitmap or vector artwork by clicking on a thumbnail of the art you want. Images can be cut, pasted or imported from over thirteen application formats. The image libraries can be cataloged for later retrieval by filetype or by one-line description.

Scrapbook+ has features comparable to several Macintosh desk accessories rolled into one. Writers of Windows-related documentation will appreciate the selective screen-capture utility. Both lasso and square marquee tools are included to snip out bitmapped portions of the clipboard. The camera tool will copy portions of the screen from any application. Scrapbook+ can be set to capture entire Windows screens, active windows, or only the client area of a window. Screenshots can grab pull-down menus within an application.

Text, bitmaps and vector art can be pasted into an image library or exported to disk files. The original image format can be preserved, or the file can be written to an internal Windows format (BMP, WMF). The program works with black-and-white or color images (no support yet for color TIFF files). Grayscale EPS, TIFF and PCX files are shown as black and white on the screen, but retain their original information when printed.

Working with text, Scrapbook+ allows data from spreadsheet and database programs to be copied/imported/exported in comma-separated, DIF and SYLK formats. This feature can be used to facilitate the transfer of tabular information to or from DOS applications. Text from a Windows word processor can be captured in Microsoft's Rich Text Format (RTF). RTF preserves font, italics, bold and underlining information and can be read by MS Word on the PC or Mac. When pasted into Scrapbook+, text can also be converted to a bitmap graphic with the camera tool.

The program is not primarily for file

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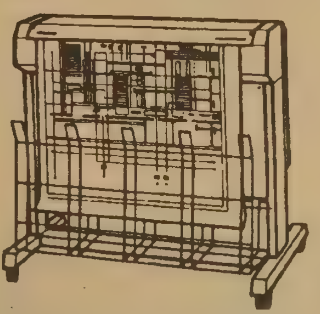

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Scrapbook+ should be most useful to desktop publishers who deal with quantities of clip art. Individual libraries can be created by content or filetype. Pictures can be retrieved rapidly by thumbnail or description-search. Version 2.10 of Scrapbook+ is fully compatible with all versions of Windows from 2.0–3.0. Users of previous Scrapbook versions can upgrade to v2.10 for $30. A discount offer to purchase Windows 3 for $50 is included in the package.

MICROPHONE II/UNICOM 2.0C

These are two telecommunications programs written for Windows 3.0—one, MicroPhone, being a PC version of a successful Mac package, the other, Unicom, from the PC shareware world.

The manuals for MicroPhone are attractively laid out, and appear to be oriented to the telecommunications novice, with emphasis on the benefits of subscribing to commercial information services. The user tutorial has a large section devoted to navigating CompuServe.

On the Macintosh, MicroPhone is generally recognized as a state-of-the-art program which offers users the latest file transfer and script options. MicroPhone for the PC is based on the Mac-like principle of shielding users from the everyday nuts and bolts of telecommunication. This has occasioned some design decisions which go against the instincts of current heavy-duty users.

The first thing I wanted to know from the reference manual was how to transfer my dialing directory from Procomm. I found out that MicroPhone doesn't use a dialing directory, per se. The names of services appear on a pulldown menu with no obvious way to set up a dialing queue. The Micro-

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> **If you're a full-time graphic artist and work exclusively in the Windows environment, Ventura Publisher for Windows may be a reasonable choice for you. If you want to run Ventura in a multitasking environment with other DOS applications, the GEM version and a 386 work just as easily.**

Phone installation program just copies its files to the hard disk. It doesn't ask which serial port to use or what kind of modem is installed. COM1 and generic Hayes at 1200 baud are assumed as defaults.

The authors of MicroPhone apparently didn't check out programs like Procomm, Telemate or QMODEM for their user-friendly features. Everything not 100% vanilla in MicroPhone is done through a series of script commands. No dialing directory, no rotary queue, and no quick way to set up modem defaults. Instead of just pointing at four numbers on a directory to dial them in succession, MicroPhone makes you construct a special "Gang Dialing Script".

When dialing with MicroPhone's generic setup, I discovered that my modem was pausing for long intervals between each digit. The program also cut short the acknowledgment tone for a BBS with a finicky HST 9600 modem. Not really MicroPhone's fault—most PC programs let you correct these things by changing the modem initialization string, or inserting commas after the number on the dialing directory. A search of the menus and manuals yielded no direct information about how to do this in MicroPhone. A call to technical support taught me to change the parameters by creating a custom modem driver script.

The preset log-on scripts installed by MicroPhone should be adequate to connect and display screen information for commercial services on a generic Hayes modem. The script for CompuServe will do a lot more, if it matches your modem type. Custom files are supplied for less-than-Hayes-compatible modems, but you may have to do some editing to combine the defaults with the log-in scripts for the services.

MicroPhone's script language includes a fair number of commands and options, but installing and fine-tuning is not intuitive. Communication is supported from 300 to 19,200 bps. Inherent limitations of Windows make background communication at 9600 bps and up a bit iffy, but high speed foreground communication should be error-free. Included file transfer protocols include XMODEM, YMODEM and YMODEM-G. I imagine ZMODEM could be run under Windows as a separate module, but MicroPhone has no built-in support for external file protocols. MicroPhone includes a MiniBBS script

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which allows users to call you, leave messages, upload and download files.

MicroPhone makes good use of the Windows environment. You can cut, paste and backscroll text with the mouse. You can work in another program while waiting to connect or transferring files. If you can learn it, the script language will give you the ability to customize the MicroPhone interface and set up automated procedures. Script buttons can be installed to do everything for users who don't want to know the theory behind it all. Software Ventures' BBS has a large library of Macintosh scripts which can be ported to the PC version. The company is working on a new PC-release which will have more file transfer protocols, and a larger library of user-friendly scripts.

Unicom is a Windows telecommunication program written with full cognizance of what hardcore PC users like and demand from their software. It has a full complement of transfer protocols, including YMODEM, KERMIT, ZMODEM, and COMPUSERVE B. The dialing directory is an ASCII file which can stay open in its own window, showing complete information for each entry. Numbers can be queued for dialing, and defaults can be altered on the fly. Unicom allows you to modify communications parameters globally or for each individual dialing entry. Keyboard macros can be recorded and invoked automatically by clicking the mouse on the function buttons at the bottom of the screen. Multiple copies of the program can even be opened to run from different serial ports. Like MicroPhone, Unicom has a "miniBBS" host mode and script language to automate log-ons, and file transfers. Since Unicom is shareware, you will be confronted with a series of information and advertising screens until you register your copy, but the trial version is completely functional.

NEXT...

Word processing, database management, desktop publishing and telecommunications—there are state-of-the-art applications for Windows in most areas of personal computing. In the next article, we'll look at Windows as a multitasker, and evaluate some third-party enhancements to the basic Windows operating environment. ■

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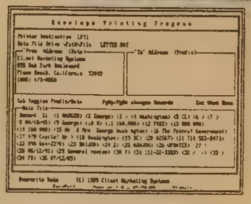

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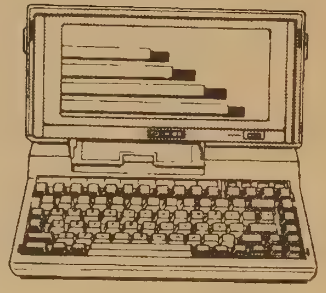

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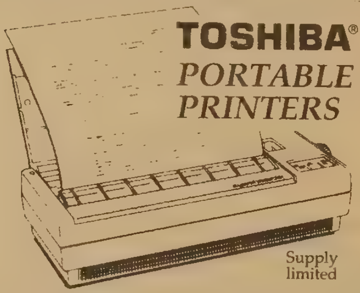

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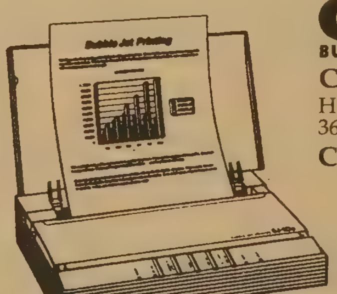

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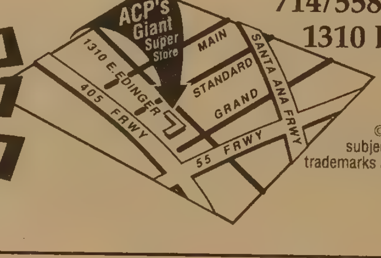

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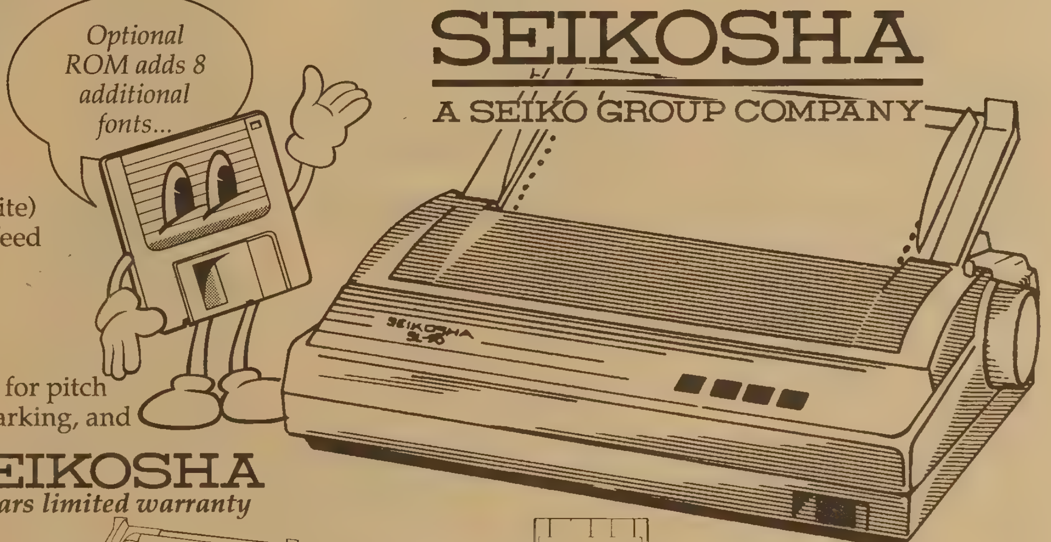
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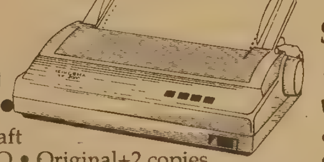

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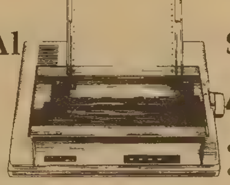
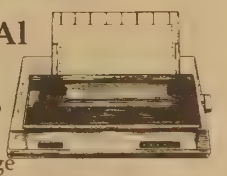


- 300 cps draft
- 50 cps NLQ
- Narrow carriage • color kit option
- Automatic paper loading/ejection
- front panel print pitch/mode selec
- parallel/serial • color kit option
- Ribbon life up to 16 million char
- 10K buffer expandable to 26K

SK-3005 AI
469.



- 50 cps NLQ
- Wide carriage
- Automatic paper loading/ejection
- Front panel print pitch/mode select
- parallel and serial
- Ribbon life up to 16 million char
- 6K buffer expandable to 22K
- color kit option

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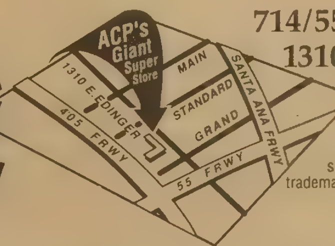

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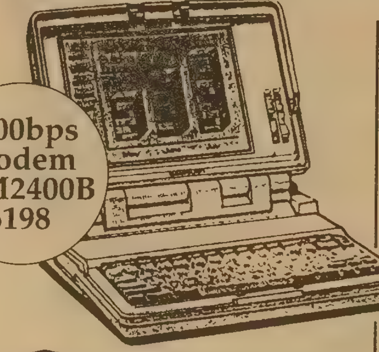
Affordable Business Computers



2400bps
Modem
#SM2400B
$198

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S3600 Laptop

Compact and portable yet remarkably powerful. 12 MHZ AT compatible with 40 Mb hard disk and easy to read VGF fluorescent display.

List $2995... **$2395.**

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Laplink III and Soft Carry Case

$249.Value!

Absolutely FREE

with S3600 purchase

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of ACP's
Best
Sellers!

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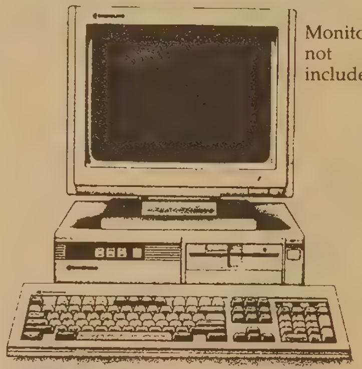
SAMSUNG

S5200 Laptop Portable

One of our best sellers! Feartures include EGA Gas Plasma display, 12.44 Mb floppy, DOS and Basic, Serial/Parallel/EGA, internal 30 Mb hard drive...come in and see this one!

List $3995.
ACP Only... **$1499.**



Monitor
not
included

SAMSUNG

SD630 Desktop

Solid 286 based performance and affordable price for first-time user or business. Includes 640K RAM, 101–key enhanced Keyboard, 1.2 Mb floppy, parallel, (2) serial and 5 slots. MS-DOS and GW-Basic too!

List $1099.
ACP Only... **$679.**

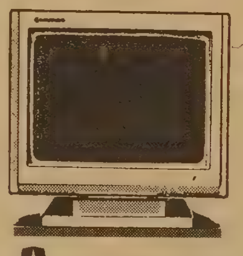
Monitor
not
included

SAMSUNG

SD700 Desktop

Combines Power, Performance and Versatility with Price! Insist on 386SX performance.
INCLUDES 2 Mb RAM! Plus 1.2 Mb floppy, serial, par, 5 slots, IDE int. and enhanced 101-key keyboard.

List $1999.
ACP Only... **$899.**



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SyncMaster 4

Big screen 17" Super VGA+ resolution. If you are looking for the top-of-line the SyncMaster is for you! 0.31mm Dot Pitch, Non-Glare screen.

(CSA7571) List $1499. ACP... **$999.**

SyncMaster 2 (improved NEC Multisync 2A)

Black, 14" Non-glare screen with 1024 X 768 sharp color graphics. Fully compatible to Super VGA, VGA, EGA, CGA, PGA, MDA, HGC and MAC II with TTL & analog, 0.31mm dot pitch.

(CVB4581) List $659. ACP... **$398.**

SyncMaster 3 (.28mm) only $449.
(improved NEC Multisync 3D)

SAMSUNG *DEMO Sale*

Monochrome Monitors

Model	Description	List	ACP
MA2565	12" Amber, MDA	$129.	$69.
MZ4571	14" White, flat, VGA	199.	105.
MP5671A	15" Portrait, white, w/card	849.	388.

Computers

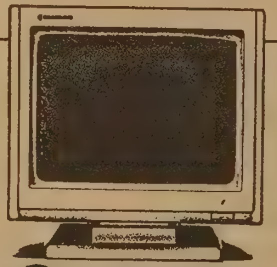
Model	Description	List	ACP
S330B	XT w/FDD, 640K, KB	$699.	$299.
S550B	AT w/FDD, 1 Mb, KB, 8 Slots	1399.	599.

Color Monitors

Model	Description	List	ACP
CK4656	14" 0.52mm, CGA	$319.	$169.
CM 4531	14" 0.31mm, NG, EGA	559.	269.
CJ 4681	14" 0.31mm, NG, VGA	559.	269.

Computers

Model	Description	List	ACP
SD630	AT w/FDD, 640K, KB	$999.	$519.
S800	386 w/FDD, 1 Mb, KB	2995.	1295.



SAMSUNG

CJ 4686 VGA Special

- 14" screen
- VGA
- 0.52 Dot Pitch

$249.

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Formerly by Bedford contains everything you need for business accounting. PC's or Mac

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Sharp P6220
4 Pound Notebook

Rave reviews for their latest offering in the laptop world. 286 with paperwhite VGA screen, 1Mb RAM and 20Mb hard drive. Amazing! List $3995

...drop in for your **Demo.**

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Special Purchase!

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We are 5 minutes from the famous South Coast Plaza We think you will like what you see!

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With spreadsheet import capability, mailing list program and graphing.

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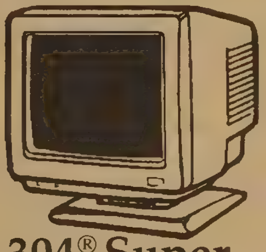

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from Sony...

Our Best Selling 1024x768 high resolution VGA monitor. Also have other models in stock!

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1000's sold. Nothing cheap about this case at all. Plus it was designed for the laptop user on the go! Compare at $150

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The most advanced and complete desktop utility you can buy for your PC.

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From Seiko

While supply lasts you can get a "Kitchen Calculator" (computes calories, diet info, etc) free with each Label Printer. Great Gift Idea! Your choice Mac or PC. Top Seller

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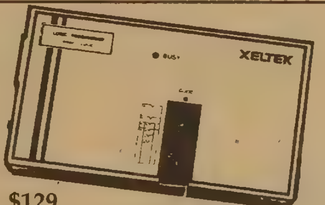
XELTEK
Programmers



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Single socket version	$129.
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Call for adapters, EPROM Erasers and other Design and Simulation Products from XELTEK.

FUJI Floppy Disks

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CRT Cleaning Towels with each 10-pack of MF2DD 3.5" Disks

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Hi-Density Disks	Box of 10
M2HD, 5.25" DS/HD	**$11.99.**
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M2D, 5.25" DS/DD	**$5.99.**
MF2DD, 3.5" DS/DD	**$10.99.**
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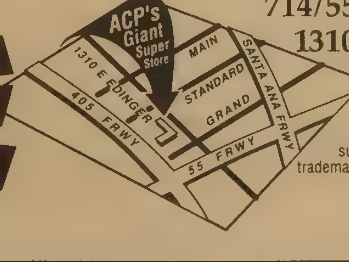

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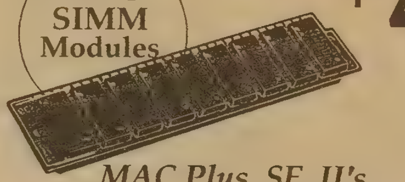
Super SIMM Saver Sale

$^{\$}47^{95}$/Meg!

(Price subject to change without notice)

MAC SIMM Modules



MAC Plus, SE, II's...

1 Meg x 9 80 ns (mention this ad).........	47^{95}

MAC SE30, II, all IIxx's..

4 Meg x 9 80 ns (mention this ad)........	269^{95}

MAC FX's...

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IBM compatible SIMM Modules

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4 Meg x 9 80 ns (mention this ad)...........	279^{95}
256 x 9 80 ns (mention this ad)...........	16^{75}

Call for SIP's

Memory Chips

1 Meg 80ns	4^{88}
256K 100ns	1^{49}

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SUN
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Wyse
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Now in stock...	
80C287A-12	288.
80387-16 MHz	348.
80387-20 MHz	368.
80387-25 MHz	488.
80387-33 MHz	598.
80387SX-16 MHz	318.
80387SX-20 MHz	368.

Cyrix

FasMath™ Processors

New!

80386 (83D87)...	
83D87-16 MHz ..	299.
83D87-20 MHz ..	349.
83D87-25 MHz ..	449.
83D87-33 MHz ..	548.
80387SX (83S87)...	
83S87-16 MHz ...	258.
83S87-20 MHz ...	298.

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Ram AT Plus Board

Up to 8 Mb extended or expanded memory. Operates to 33 MHz. Uses 1 Meg dRAMs...

with 0K onboard........... **119.**

Ram AT Plus I/O

with 0K onboard......... **129.**

DFI

2000A/AT Board

Up to 2 Mb extended or expanded memory.

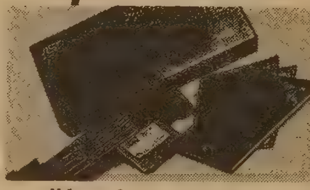
with 0K onboard ... **99.**

Megalith 4 Mb AT

AST Advantage 286 comp. uses 256K x 4's

with 0K EEMS... **119.**

AST Specials!



...all boards are 0K, quantities limited to stock on hand

Advantage AT	49.
Rampage AT	59.
Rampage 286	99.
Rampage 2/286	89.
Advantage Premium ..	89.
SixPak, XT, no manual	69.
Adv 2/386(PS/2 70/80)	99.
Adv 2 (PS/2 50/60)	79.
4 Port/XN or DOS	99.
AST 3270/Coax	199.
5251/11	299.
SNA/BSC Gateway ..	299.

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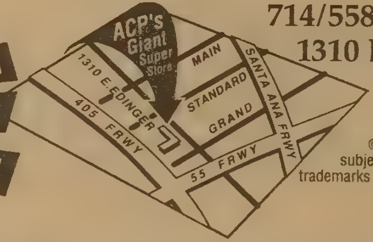

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Mass Storage
Selection and Low Price
$49. for 10 Meg!

CONNER PERIPHERALS

IDE *AT Hard Drives*

Capacity	Model	Specs	Price
42 Mb	CP3044 IDE	IDE, 1:1, 25ms, 3.5"	$349.
104 Mb	CP3104 IDE	IDE, 1:1, 25ms, 3.5"	$599.
208 Mb	CP3204 IDE	IDE, 1:1, 25ms, 3.5"	$929.

Seagate

Capacity	Model	Specs	Price
20 Mb	ST225 Drive	MFM, XT/AT, 5.25"HH	$195.
30 Mb	ST238R Drive	RLL, XT/AT, 5.25"HH	$219.
40 Mb	ST251-1 Drive	MFM, XT/AT, 5.25"HH	$269.
40 Mb IDE	ST157A Drive	AT, 3.5"HH, Bare Drive	$279.
111Mb IDE	ST1126A Drive	IDE, AT, 3.5"HH	$649.

IDE Adapter	$29
IDE Adapter w/Floppy	$49

Floppy Drives

Size	Toshiba	TEAC
360K	$59.	$60.
720K	63.	66.
1.2Mb	69.	74.
1.44Mb	69.	79.

Other models and brands also available

Controllers

Western Digital

Model	Description	Price
WD 1006V-MMI	MFM 1:1 Hard	$88.
WD 1006V-MM2	MFM 1:1 Hard/Floppy	$98.
WD 1006V-SR 1	RLL 1:1 Hard	$98.
WD 1006V-SR 2	RLL 1:1 Hard/Floppy	$109.
WD 1007V-SE 1	ESDI 15 M bit Hard	$179.
WD 1007V-SE 2	ESDI 15 M bit Hard/Floppy	$199.

Always

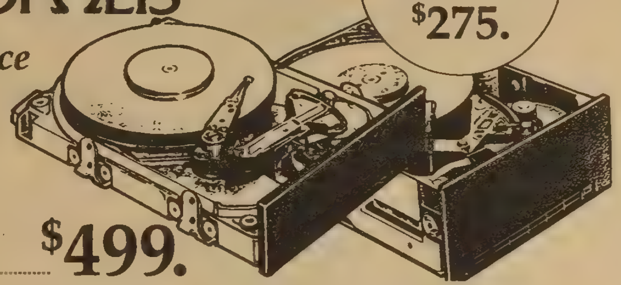
Model	Description	Price
32 bit EISA386/486	SCSI w/ok to 32Mb Cache	$849.
16bit AT	SCSI Hard/Floppy	$188.

Western Digital® Hard Disk Controller

WAH1003
Hard Drive
MFM, XT/AT
$24.

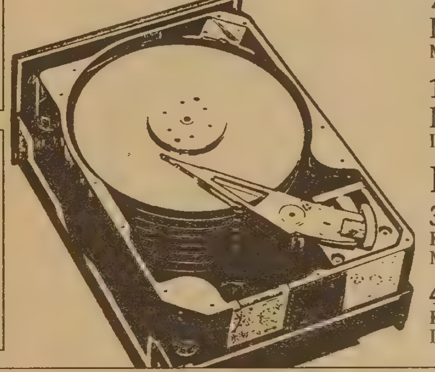
MICROPOLIS

Performance Drives...



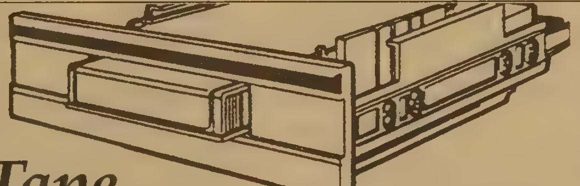
Capacity	Model	Specs	Price
71 Mb	1335 Drive	MFM, AT, 28ms, 5.25"FH	$499.
142 Mb	1355 Drive	ESDI, 23ms, 5.25"FH	$849.
340 Mb	1684-7 Drive	SCSI, 15ms, 5.25"HH	$1499.
345 Mb	1664-7 Drive	ESDI, 14ms, 5.25"HH	$1408.
676 Mb	1568-15 Drive	ESDI, 16ms, 5.25"FH	$1990.
1.2 GB	1598-15 Drive	SCSI, 16ms, 5.25"FH	$3699.

Special!
WD95044A
40 Mb, IDE
$275.



ACP Specials!

Brand	Model	Specs	Price
Imprimis	330 Mb Drive	ESDI (Supply Limited)	$995.
WREN/CDC	150 Mb Drive	SCSI (Supply Limited)	$699.
DENSI	10 Mb Drive	MFM, 5.25"FH (Supply Limited)	$49.
TOSHIBA	65 Mb Drive MK134 FA	RLL, 22ms, 3.5" HH	$339.
	72Mb Drive MK 72 PC	MFM,25ms 5.25"FH	$599.
	100 Mb MK 324F IDE	IOE, 22ms, 5.25" FH	$599.
KALOK	30Mb Drive KL 330	MFM, AT, 40ms, 3.5"	$239.
	40 Mb KL343 IDE	IDE, 28ms, 3.5"	$277.



Tape Backups

Colorado® Jumbo Drive

60 Mb/120 Mb
w/ Data Compression
ACP (internal) .... $269.

Mountain® Internal 60Mb Backup

for AT User, uses DC2000 Extended length tape. Includes Tape Backup software.
Two year warranty...... $299.

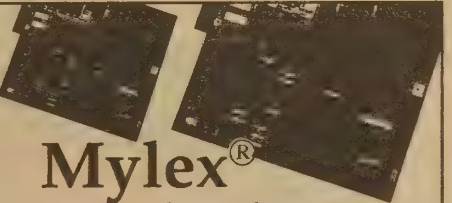
AIR™ 486 Motherboard

- 80486 25 or 33 MHz
- 128 or 256 cache
- ISA or EISA
- Phoenix/AMI Bios
- 4167 Socket
- Baby or full-size
- One year warranty

Call ACP!

ACP 386SX-16

Motherboard 0K... $399.



Mylex® Motherboards

Model	Price
MXS 386SX-16MHz	$425.
MWS 386-25 w/64K cache	1099.
MXA 386-33 w/128K cache	1399.
MAE 486-25 EISA	call.
MAE 486-33 EISA	call.

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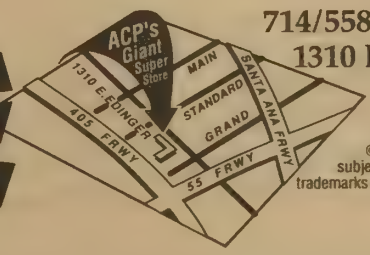

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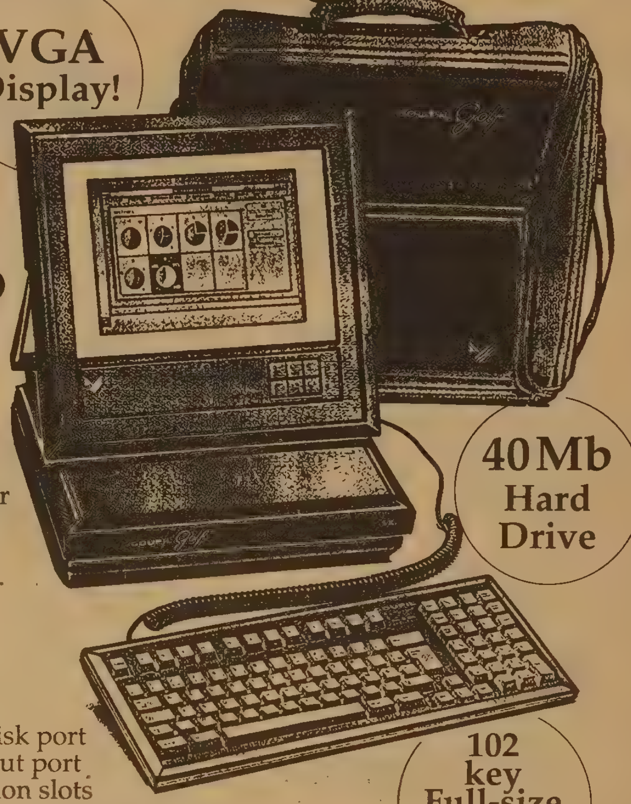
GOLF 386SX

Price Breakthrough!

was $6495...

Save $4000.00
You Pay Only
$2495.



GOUPIL GOLF SX

"the Complete Portable Desktop"

Without compromise the "Golf SX" is the "Perfect Solution" for the executive on the go! The "Golf SX's" integrated portability kit packs your entire desktop is in one convenient 17 lb. carrying case. No other laptop or portable has the capability of letting you take everything home or on a trip and continue right oncomputing just as if you never left the office. No more 'wimpy" portables that require special programming!!!

So Much for So Little!

The GOLF SX Includes:

- 16 MHz 80386SX CPU
- 40 Mb Hard Drive
- 1 Mb RAM expands to 9 Mb
- 1.44 Mb 3.5" floppy drive
- LCD Pearl-White display
- Full-size VGA display
- Coprocessor socket
- Serial port
- Parallel port
- External disk port
- Mouse input port
- (2) expansion slots
- 102 key keyboard (removeable)
- One Year Factory Warranty

T.Stickle CEO/Consultant Irvine CA..............................

" I have owned and used a Golf Computer since they were first introduced in the US by Goupil of France. I liked the european styling and unique design. As a business consultant I am constantly on-the-go and I need "My Computer" with me at all times. I use a mouse under Windows and on most laptops this is difficult to plug-in. My Golf has the same connector along the side that a standard computer has so I can just plug it in and go. I also like having available for modem/fax or other uses (2) expansion slots. To go from my office to my home I use the same computer, same full-size keyboard, same display ...all fit easily into their custom carrying case. I would recommend the GOLF SX for anyone looking for true portability without compromise."

Our Best Buy in 15 years

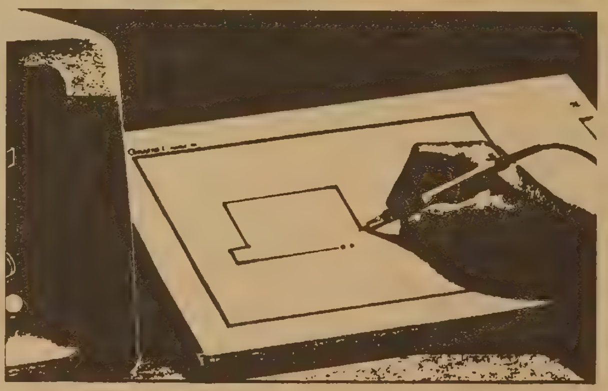
STOP AND THINK BEFORE YOU BUY

If you are considering a purchase of a laptop or portable ask yourself: ...does it provide me with everything I need without any hassles of connectibility, lugging external drives, no booting problems, no eyestrain due to dim or blurred displays?

Without question the "GOLF SX" offers a completely uncompromised solution that you can confidently experience when you own your very own. The "GOLF SX" is a total system solution. ACP has available only a couple hundred units at this price. We expect a sellout so don't miss out! Stop by for a demo or call and we will Fax or send additional specifications.

Complete with 1 year factory warranty. Warranty center is located in So. Cal.

Special Purchase from Mitsubishi



GRAFNET from Mitsubishi®

Model 01 Digitizer

High Resolution (0.1mm/250 lines/inch)

Deluxe desktop digitizer for easy, high speed (60 points per second) computer graphics input. The Model 01 is size "A" with 8" X 12" digitizing area on a compact tablet suitable for lap or desktop use.

Includes:
Grip stylus pen & 4-button 'Puck'cursor.

Features:

- High speed and high resolution
- Universal compatibility
- AUTOCAD, Drafix, Versacad and most other CAD software compatibility
- Wall-mount DC power supply
- RS232 Serial standard

Retail price for Model 01 with stylus is $355.00. Optional 4-button cursor is $95.00. Your price for the model 01, a $490.00 value with cursor and stylus, only from ACP.......... **169.**

While Supply Lasts!

PLUS!! GRAFNET Model 02

Same as Model 01 except:

- **Faster:** up to 80 points/sec
- **Larger:** 13" X 16.5" active area

$690.00 Value with cursor and stylus, SALE....... **199.**

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The Hyundai Advantage!

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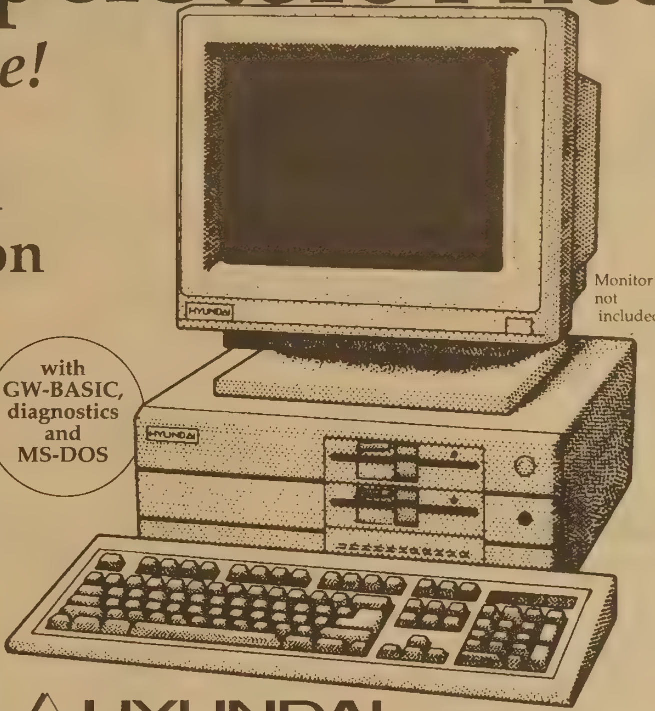

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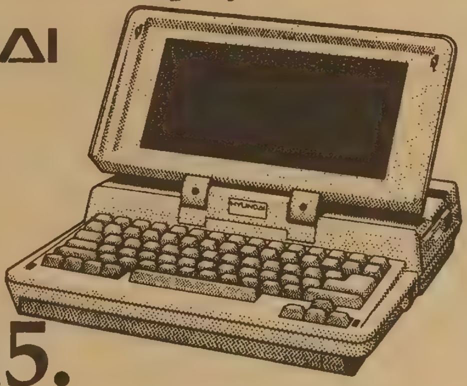

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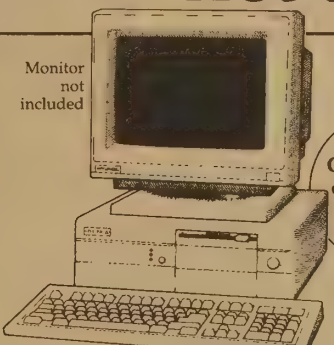

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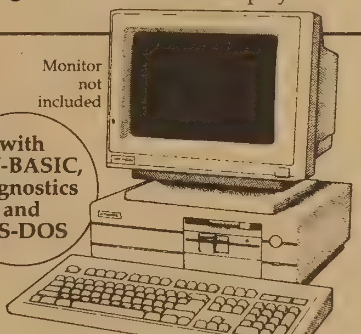

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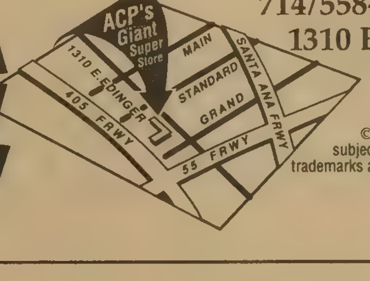

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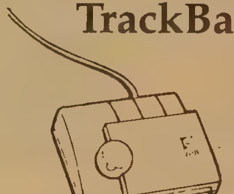

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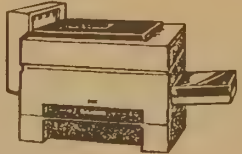

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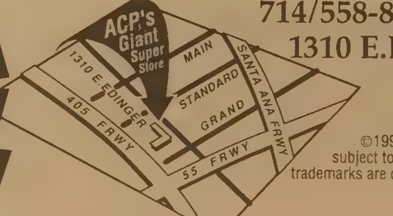

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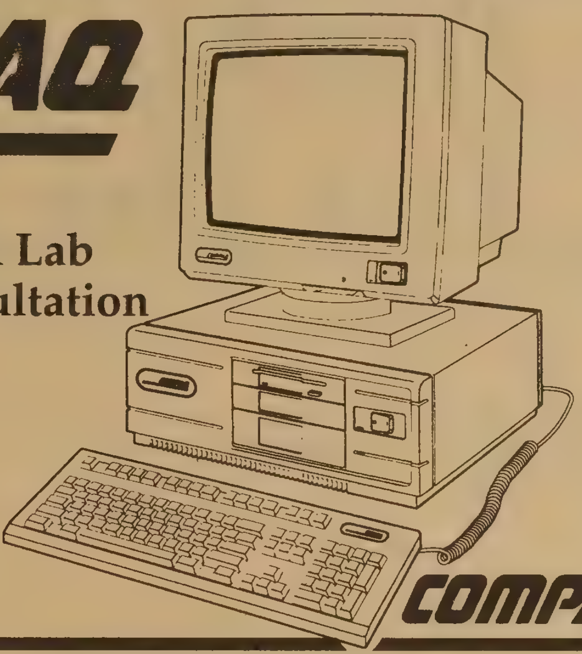

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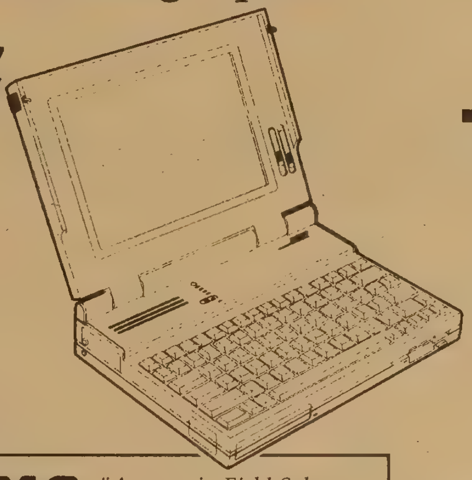

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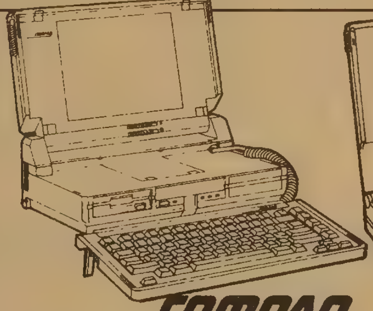

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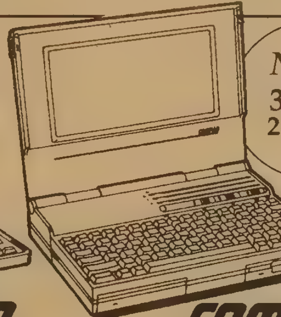

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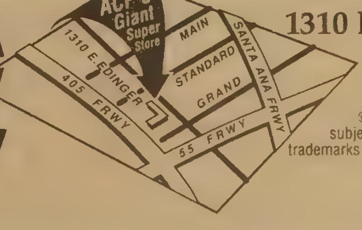

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Desktop Publishing For The DOS Office:

Software Choices

BY BIRRELL WALSH

In our previous discussion of the issues involved in setting up your DOS office for desktop publishing, we looked at the hardware choices. Briefly, these were our recommendations:

•Consider your people as more important than the hardware. What works for them will work for you in the long term. In practical terms, that means taking them with you when you shop.

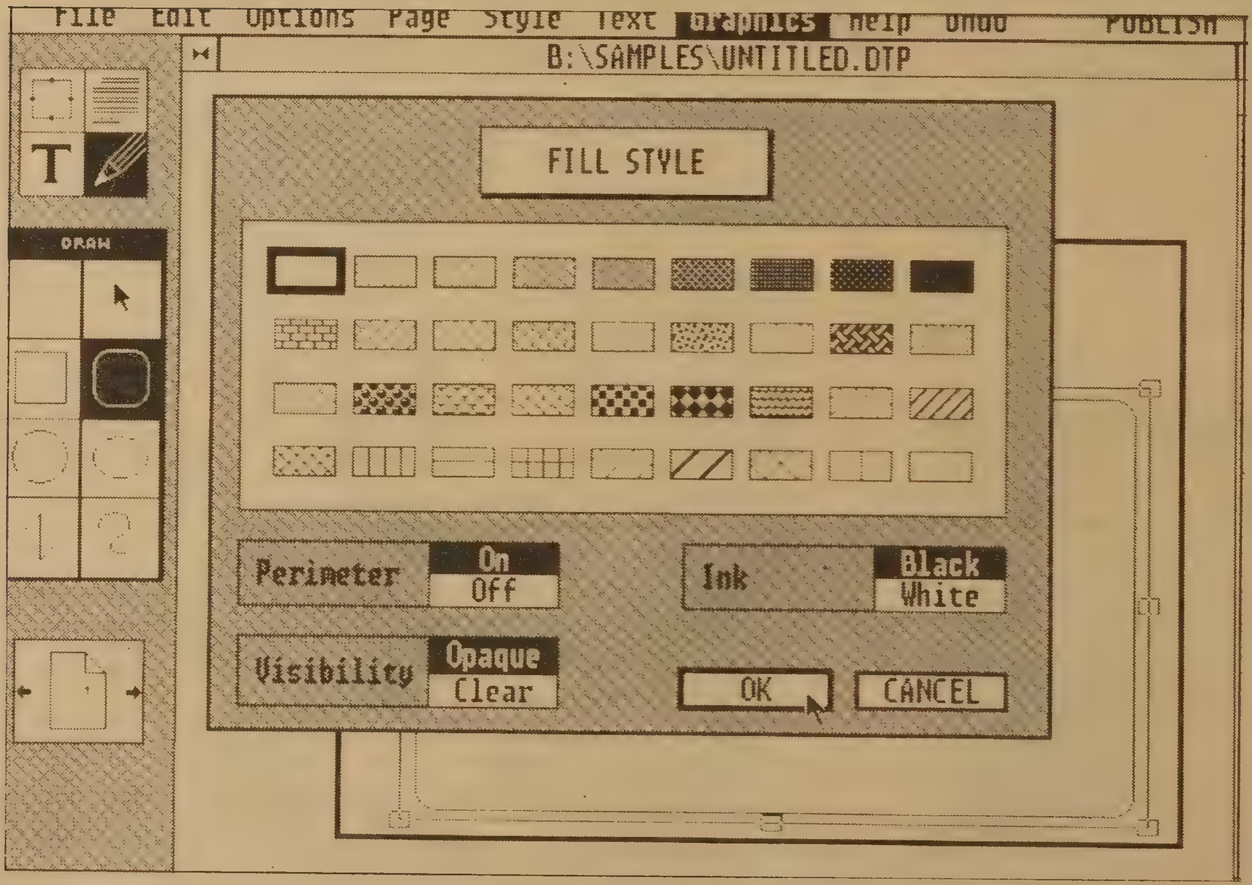
•If you have a 286 computer, keep it for now. If you have an XT, it is time to trade it in for a 386 (not an SX). Applications are coming that require the large memory that only 286 and 386 machines support. You must have a hard disk for desktop publishing.

•We recommended the crisp Trinitron look of the high-resolution (1024 x 768) Sony 1304 monitor unless you also need to use the monitor for a CGA laptop's external display. In that case the Sony 1302 works well. If you do not want to upgrade to this level, keep your Hercules-compatible display. Don't bother with the intermediate resolutions (EGA, VGA).

•We recommended the reliable, fast, and skillfully supported ATI Wonderboard as the display card. It comes with a mouse. We also recommended the industry-standard Microsoft Mouse, and (for heavy graphic uses) the IMCSI Mouse-Pen.

•For a printer, we suggested that you get a printer compatible with the Hewlett-Packard LaserJet series—the standard in the DOS laser printer business—and that you turn it into a PostScript printer with the very popular Pacific Page Cartridge from Pacific Data Products. Finally, we suggested that you get at least a hand-scanner, and recommended the Logitech ScanMan.

What do you get for your extra money if you spend it on high-end hardware? Programs that allow you to do finer and more professional work will demand a great deal of memory and speed. You can see more detail on the better monitors, and you can make layout decisions without having to print a proof at every step. Your work is faster, and your people are more productive. The hardware serves as a workbench on which your people and the software can produce elegant work.



Publish It! provides an unusually powerful entry-level package.

ON TO SOFTWARE

You can try out the desktop publishing business with Timeworks' Publish It! Similar in many ways to Ventura Publisher, it is a usable package that may do everything you need.

The next step is to use Windows 3. With Microsoft's Graphical User Interface, you can install and use Corel DRAW! Then you can move on to the two Windows-based desktop publishing packages that dominate the market: Ventura Publisher itself and Aldus PageMaker.

PUBLISH IT!

Timeworks has released the remarkably useful "introductory" package of Publish It! While it is customary to speak condescendingly of beginning desktop publishing packages, it would not be wise to do so with this one. This is a complete program, easy to use and powerful, and for many users it is all that they will need.

You can use the program to write the text. It includes a word processor with search and replace, and is reasonably fast on the screen. It also imports from all the standard DOS word processors, as well as accepting ASCII files.

Layout is quick and intuitive, using the now-universal metaphor of columns and graphic windows as containers to be shaped

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Scot Mono VGA 14″	$99

FDD & HDD Controller

Morse MFM 1:1, 2FD/2HD	$42
DTC 7287 RLL, 1:1 HD/FD	$75
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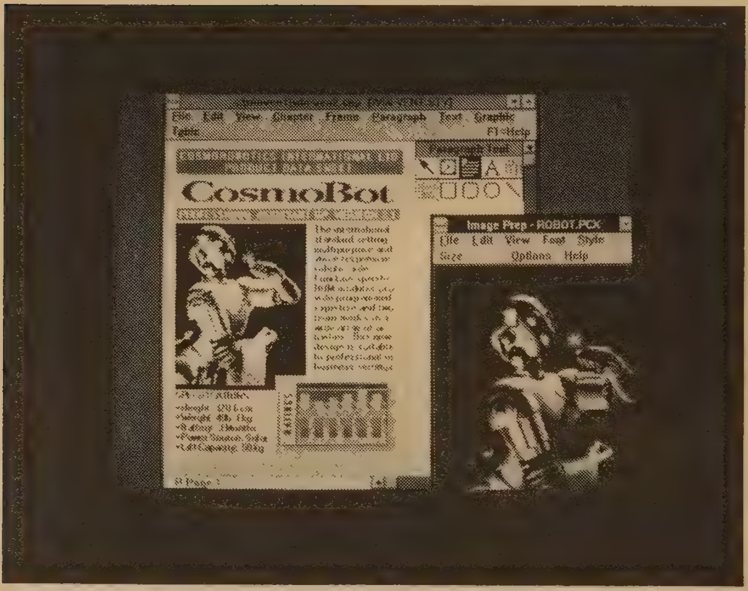
HP Deskwriter	$625
HP Scanjet w/IBM Interface	$1390

Memory

1MX9-80 SIMM	$44
1M-80 DRAM	$4.95

and then filled by the user. Text is poured into the columns you designate. Any surplus text that does not fit is retained by Publish It! until you have a place to put it. The "containers" into which you pour text or place graphics can be opaque (so they hide what they cover) or transparent to allow text and graphics to show through from underneath. Text can be set to flow around graphics, although the only shape those graphic regions can have is rectangular. Graphic images are accepted in TIFF, PCX, EPS, Gem, Lotus and other formats.

Publish It! is not a huge investment (the street price is $140-$180), so it's the package to get if you want to try out desktop publishing without mortgaging the house. Publish It! is remarkable for the collection of templates, fonts, and clip art it includes. When you begin work with the program, you already have an excellent collection of layout templates which can serve as a beginner's model. If you want to publish a newsletter, Publish It! is more than adequate.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Xerox Ventura Publisher is now available in a Windows version.

BIGGER AND BETTER: THE WORLD OF WINDOWS

With Windows 3, we can use the desktop publishing package in a common environment with word processors and spreadsheets. You can use the built-in paint and text program to build the images and copy, should you wish. Windows 3 is like an inelegant Macintosh.

Because of the similarity, a number of programs have been imported from the Macintosh to the Windows environment. One of them is PageMaker, from Aldus. Ventura Publisher has been imported from the competing GEM environment. A third group has been developed for Windows: Corel Draw! is an example. These three streams have come together to make Windows 3 a very successful environment, with many supporting software makers.

We mentioned earlier that some programs need more memory than you can get on an XT, and here they are—both PageMaker and Ventura Publisher want more than a megabyte of RAM. Ventura currently wants 2Mb and a 386; and PageMaker 4 is expected to request 2Mb (though it might settle for 1Mb and a 286). If you wish to use an IBM-compatible for high-end desktop publishing, you will need Windows 3 and a big machine.

COREL DRAW!

If your publication is heavily graphic, get Corel Draw!

If you have never used a draw package, the difference between draw and paint programs can be intimidating. Paint programs are fairly obvious: the cursor functions like a pen or brush, and your skill with a pencil quickly transfers to the screen.

A draw (or "vector graphics") program treats graphic elements as elastic and mobile objects. You create them by defining end- and mid-points of perimeters, and the program creates, fills, and manages the objects for you. One common use is to build a complex headline that mixes fonts and other images.

Managing the object is the specialty of draw programs. The headline (or other graphic) you have created can be rotated or made snakelike, shaded and semi-transparent. Fills of color or patterns can be richly complex. The handles on graphic objects can each be moved, and each move reshapes the object.

The image is stored not as a bitmap, but as a series of formulae for calculating the position and appearance of the graphic object. The draw program will render images in the best resolution available in each medium, whether the screen or your printer. Corel Draw! will also generate color separations.

Corel Draw! shares the Windows environment with PageMaker and Ventura. You can build an image in Draw!, move it to the publishing package, and then return to Draw! to reshape it if need be. You may find, though, that Corel's package *becomes* your major publisher itself. If you publish mostly single sheets with many graphics, or if you design master images to be transferred to other media (such as T-shirts, key-chains, or letterhead), Corel Draw! is more efficient than any text-oriented publisher.

Corel Draw!'s street price is $330 to $390.

ALDUS PAGEMAKER AND XEROX VENTURA PUBLISHER

Up till now Aldus PageMaker has been the choice for magazines or graphically complex pages. Xerox's Ventura Publisher has been the choice for multichapter books and for the handling of tables. But Aldus's Pagemaker 4 for the PC is worth waiting for, whether you publish books or magazines.

For some time the battle between PageMaker and Ventura Publisher has been a case of convergent evolution. A feature would appear in one, and the next revision of its rival would have that feature as well.

We mentioned earlier that some programs need more memory than you can get on an XT, and here they are—both PageMaker and Ventura Publisher want more than a megabyte of RAM. If you wish to use an IBM-compatible for high-end desktop publishing, you will need Windows 3 and a big machine.

Both programs have the same metaphor as Publish It! Text and graphics are placed into containers which are positioned on the page by the designer. Both allow the user to develop formatting definitions (such as "Subheadline = Times Roman font, 16 point size, centered") and to store the definitions in style sheets. Both let you format paragraphs by selecting them and then clicking on a style-sheet definition. They accept graphics in similar formats. Both will print on PostScript printers and on the DOS-standard Hewlett-Packard LaserJets. Street prices for each are in the $500 to $590 range.

There are differences in the current versions. At this time Ventura has book-publication amenities that PageMaker lacks. It can generate tables of contents and indexes.

Continued on page 118

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Keyboards For The Laptop User

BY ED KAHN

These days many vendors are offering keyboards designed to really meet the varied needs of users. Recently I've found two excellent offerings, particularly well suited to laptop users who want to leave keyboards at several locations.

Keyboard preference is really personal. No matter what the layout, tactile response is really a matter of individual preference. I like a keyboard that is snappy. In many ways, I like the feel of a standard IBM keyboard as well as any of the competition, but I don't like the layout.

Two keyboards that have the feel I like plus lots of nifty features are the Northgate OmniKey Ultra and the Datadesk Switchboard. Either of these will serve you well. They are both well made and carefully thought out. Which is right for you depends mostly upon your application.

NORTHGATE'S OMNIKEY ULTRA

In the past, only the Northgate keyboard could get my full and unconditional recommendation. The Northgate is certainly the most deluxe of conventional keyboards. For word processing, it can't be beat. It has many features that have won the praise of computer users. It has just the feel I love. Its layout and innovative design set it apart from the competition.

The newest model of the Northgate keyboard is the OmniKey Ultra ($149.00). You order it through the mail, but they do have an 800 number, and if you don't like the keyboard you can return it for a full refund within thirty days, so there's little risk. In addition to the basic typewriter keyboard layout, there are two numeric keypads, one devoted to the numbers and the other to cursor movement. I find this a wonderful layout. I always prefer to use cursor keys on the numeric keypad to other alternatives. On the OmniKey Ultra, you don't have to choose between having full cursor control on the keypad and the use of the keypad itself. You have both.

Northgate incorporates other advanced design features as well. You don't have to choose between having the function keys across the top or along the left side. Instead, Northgate provides both. The twelve function keys along the left side of the keyboard are much like those on the early PCs. Function keys 11 and 12 are spaced above the familiar ten function keys, so the templates of many software packages will still fit conveniently over the ten keys. Across the top is another row of twelve function keys. As the keyboard comes from the factory, these function keys are set up as shifted function keys. This means that if you need to hit Shifted F4, you merely hit F4 on the top row and it is done. Dip switches allow you to change these keys to Alt + the function key or Control + the function key. If you want, you can also set them up as unshifted function keys.

A button on the back side of the keyboard, essentially a Control-Alt-Delete button, does a warm boot for you. And finally, the board has a toggle that allows you to set your keyboard up so that a shifted period or comma will still give you the period or comma rather than the "<" or ">" keys.

If your portable will let you add a full keyboard, check this one out.

Northgate's OmniKey Ultra is a favorite for laptop and desktop use.

THE DATADESK SWITCHBOARD

They used to say that if you built a better mousetrap the world would beat a path to your doorstep. Now it seems that if you build a better mouse, computer users will beat a path to your factory. Datadesk has just taken a step in the right direction by designing a keyboard completely unlike anything previ-

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ously on the market—a modular keyboard that will work with all computers: PCs, Macs, PS/2s and anything else in between. And it has an optional trackball.

Datadesk learned a lot from Northgate and incorporated many of the OmniKey's best design features, but they made it into a highly flexible package with unequaled versatility. The basic keyboard has a typewriter keypad, cursor control keys, and a numeric keypad that can be shifted to work as a cursor control pad. But each of these three elements is removable and can be repositioned in any order you like. If you're left handed, for instance, you might want to put the numeric keypad to the left, have the letter keys in the center, and place the cursor control keys to the right side of the keyboard. All of this sounds pretty standard, but it offers the opportunity to set things up just the way you want. Now comes the fun.

Datadesk has also designed lots of other modules you can use in place of or in addition to these standard modules. The basic keyboard retails for $239.95. It comes with an assortment of cables that allow you to connect it to any computer.

You can replace the cursor control keypad module with a high resolution trackball module ($149.95) that also includes the cursor control arrows. This is a mouse substitute device that works off of a standard Microsoft mouse driver and operates through a serial port. With the advent of Windows, I suspect this will become a really popular option. It eliminates the need for a separate pointing device as well as the requirement for a lot of clear desk space. You can run Windows a lot more conveniently, without having to take your hands off the keyboard. A lot of the objections to a mouse are eliminated with this device.

Another module is a vertical function keypad that you can install to the left of the typewriter keys. For those of us who still prefer the function keys to the left, this is an essential module. If you find that too many of the modules appeal to your notion of a perfect keyboard, you can add additional modules to either the left or right of the existing housing. These other modules just snap in place and increase the overall size of the keyboard.

On the OmniKey Ultra, you don't have to choose between having full cursor control on the keypad and the use of the keypad itself. You have both.

While this setup is not inexpensive, it certainly gives you a range of options that no other keyboard offers. It goes without saying that I like the feel of this keyboard. It is considerably different from that on earlier Datadesk models. If it suits your needs, it is worth checking out. It is well made and comes with a three-year warranty. ■

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EGA Picture Files— The following disks are EGA pictures EGA is required to view.

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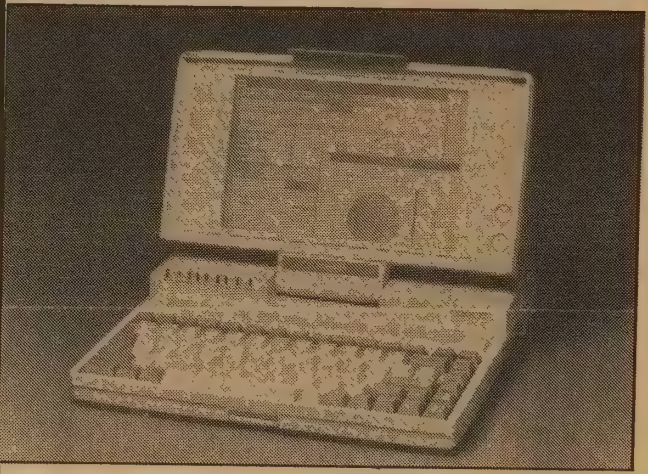
Computer Of The Month:

The Toshiba T1200XE



Toshiba's latest notebook computer offers power and handy features.

Toshiba has long been known for innovative design and expert craftsmanship in portable computers. Their T1200XE is no disappointment. Weighing 7.9 lbs., with overall dimensions of approximately 12" x 11" x 2", this notebook computer packs a lot of power. It is run by an 80286 CPU clipping along at either 6 or 12MHz. It includes both a high density 3.5" floppy drive and a 20Mb internal hard disk. The 9" diagonal screen offers a crisp blue on silver image.

The keyboard has an excellent layout—something we can always count on from Toshiba. Although there is an embedded numeric keypad, there are standalone keys for **Home**, **Page Up**, **Page Down**, and **End**. The keys have a nice feel; while they don't offer a full travel, they are more than adequate.

This powerful small unit has a lot of features you'll love. A couple of keys will bring you to a pop-up window with many choices about the configuration of the machine and a display showing just how much power you have left in the rechargeable battery pack. This is convenient.

Another especially handy feature is a resume option, which lets you turn off the computer in the middle of an application; when you turn the computer back on, you'll be in exactly the same place. This is a fabulous time saver. It is convenient for everyday use because you do not have to wait for the system to reinitialize itself and load memory resident programs, drivers, and all of the other things which you have in your config.sys and autoexec.bat files.

Toshiba has built a powerful computer in this small package. It comes with 1Mb of RAM, but is expandable to 5Mb. This high memory can be configured any way you want it—RAM disks, extended, or expanded memory.

The battery arrangements in the T1200XE are sophisticated. There are actually three different batteries. In addition to the rechargeable, there is one for the internal clock. A third battery stores what is in memory if you use the resume feature. It also kicks in if the rechargeable batteries run down. A safety feature automatically shuts the machine down and saves what's in memory if your rechargeable battery runs too low and you don't save and power down. This memory battery will recharge itself from the nickel-cadmium batteries or from the AC adapter. It takes as long as eleven hours to fully charge. The rechargeables, on the other hand, are back to full power in a couple of hours.

Toshiba provides excellent documentation. A starting packet clearly labeled *First Time* contains the information you'll need to get started. There's also a set of four booklets detailing the operation of the computer and providing the documentation to DOS 4.01, which is included with the computer. The entire reference manual, as well as the DOS coverage, is also available through a convenient hypertext arrangement, which lets you explore the complete documentation from within the computer itself.

If you need a notebook computer, this one certainly is worth a look. It does not, however, accommodate an external keyboard of your choice. And if you are using an external monitor, you are limited to CGA. These small computers just do not come with VGA capability yet. ■

RESOURCES:

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NeXT And Network-Based Publishing

Plus: BOOTCON

BY WAYNE A. YACCO

LOCAL AREA NETWORKS

One of the more interesting demonstrations I've seen recently was at the Seybold Electronic Publishing Conference in San Jose.

Steve Jobs showed the new NeXTdimension color stations with 32-bit color, including eight levels of transparency. His demonstration featured an opaque object (Donald Duck) which remained visible as it moved behind the windows of a sports car. NeXT systems include JPEG, display-PostScript, and PostScript-output support that allows images like this to move among applications with the greatest of ease.

However, some of the system's slightly less spectacular features were equally interesting. The NeXTstep operating system can output PostScript files directly to a fax server. These documents are created from outlines at the same resolution as the fax standard (approximately two hundred lines), so they don't suffer from the distortions that images created at three hundred dots per inch undergo when bitmaps are scanned or translated.

Along with Apple, DEC, and Sun, NeXT is poised to offer LAN solutions to the printing industry. Note that all of these companies have more than a passing interest in networking. NeXT builds Ethernet, network support, and electronic mail into all of its machines. Yet, the best estimate of when publishing's transition to LANs will happen is sometime within the next ten years.

Ten years? Yes. Although microcomputers provide a rich platform for desktop publishing—off-the-shelf software, bitmapped displays, easy interfaces, standard architectures—the desktop publishing phenomenon itself is an anomaly in the publishing world. That's because it is largely an individual activity. Traditional turnkey publishing systems are networked, and they integrally support cooperative processing.

Support for cooperative processing is what the micro-based LAN solutions still lack; according to Craig Cline, associate editor for Seybold Publications: "What's happening in publishing is that the industry is struggling to reinvent what they had with proprietary systems. Single-user desktop publishing is sort of an aberration, because it's not really the way most people work."

What's missing most is work-flow management and production tracking, although there are a couple of work-flow applications—from Boss Logic for NeXT, Odesta for Mac. Next month I'll discuss Office Solutions, a document-and-information-management system, currently in large law offices, that unites a number of applications including the Mezzanine network file-management system, in the MS Windows environment. It could foreshadow a similar publishing solution for the PC.

Incidentally, while the NeXT computer's fax solution isn't available for the PC, something very like it will be soon. Delrina is preparing to ship two similar software solutions. One will work with fax boards supporting Intel's CAS and the other those using Sierra Semiconduc-tor's SendFax chip set. And guess what? It's a Windows 3.0 application that works just like any other print driver.

BOOTCON

A few weeks back I attended a user group meeting out in Pasadena and saw someone from Modular Systems demonstrate the BOOTCON utility. Since it's very applicable to networking, I'm going to tell you about it even though the guy who runs the group out there wants to keep this information all to himself and his flock...

BOOTCON presents a menu at boot time that lets you configure your system on the fly. Instead of having a different version of config.sys for each network to which you want to connect, you simply include all of the variations in a single file. No more renaming files or maintaining special directories.

Some special remarks must be added to the configuration file to help BOOTCON create its menu and select the right set of statements. You can have up to twenty-six different configurations in a single config.sys, which gives you plenty of alternatives for loading different sets of drivers on each network. You can satisfy any combination of application requirements.

Here's a simple example of a BOOTCON file:

```
BUFFERS=30
FILES=20
DEVICE=C:\DOS\NECEMM.SYS
```

Continued on page 120

> **BOOTCON presents a menu at boot time that lets you configure your system on the fly. Instead of having a different version of config.sys for each network to which you want to connect, you simply include all of the variations in a single file. No more renaming files or maintaining special directories.**

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Another Side of Bill Gates

STORY BY
JOHN PERRY BARLOW
PHOTOS BY
MICHAEL JAY

Even in an industry characterized by the irregularity of its tycoons, Bill Gates stands out.

While there is no truth to the rumor that Bill is actually short for Billionaire, Gates is, by an absurd margin, the most financially successful of all digital entrepreneurs. In the fifteen years since he dropped out of Harvard to get involved with the first personal computer, the MITS Altair, and later founded Microsoft with boyhood friend Paul Allen, he has turned the latter into the largest software producer in the known universe. It commands a near-monopoly in microcomputer operating systems as it produces a highly successful and diverse line of applications. And, like the industry it squats magnificently atop, it is growing like kudzu.

> **Barlow on Microsoft's chairman: "Bill Gates may be the smartest man I've ever met... at least in terms of raw MIPS. This CPU has a very fast clock rate."**

Unlike most of his early colleagues, Gates has not fallen victim to what sometimes appears a necessary ritual of corporate development beyond a certain scale—excision of the hacker founder. Many companies come to resemble their market more than their maker, but Gates has managed to hold the lead throughout his long waltz with the most formidable partner of all, IBM.

And, while his thick horn-rimmed glasses no longer require white tape, he remains, at least in personal style, the quintessential nerd. He rocks rhythmically back and forth when he's impatient. Which he is a lot. He has a kind of *Boy's Life*-gone-Dada sense of humor. He has an exploding cowlick which would have worked well on a character from *Our Gang*. America's richest self-made man under 40 appears barely over 20 and remains, well, kind of cute.

There is nothing cute about his mind. Though I've led a life blessed with the frequent company of stellar intelligences, I would still say that Bill Gates may be the smartest man I've ever met... at least in terms of raw MIPS. This CPU has a very fast clock rate. At arm's length, you can *feel* it working.

In my previous exposures to Gates, I found myself irritated at the purposes to which he applied all this cerebral horsepower. In public at least, he used it to construct The World According To Gates, a vast creation of complex self-reference into which one could hardly insert so much as a toothpick of doubt. In press conference after press conference, I saw him allege with bland opacity that whatever interpretation of reality might serve Microsoft was somehow True.

OS/2 was a huge success, he said. The alliance between IBM and Microsoft was unassailable. Customers found no important difference between Windows and the Mac interface. It took me a while to realize that, on some of these occasions, he was the only person in the room who didn't think he was slinging it.

The worst thing about it was that it worked! The official Reality of Microsoft occasionally must go through Orwellian shifts, but it does so with great suppleness. The difficulties of OS/2 are suddenly insignificant beside the explosive (and somewhat puzzling) success of Windows 3.0. When Word 4.0 for the Mac came out a year late, almost everyone who, in the meantime, had purchased FullWrite or Nisus, grudgingly sent in their $75 upgrade fee. And Microsoft, for a company of its size, seems strangely human. Obviously, there is a lot more to Bill Gates than self-deception.

Watching Gates in action left me with mixed feelings about wanting to interview him. On the one hand, he is, without any question, extraordinary—the most powerful, and possibly the most resented, individual in the computer business. On the other hand, the possibility of getting an answer from him which didn't represent the party line seemed slim. My editor thought it even less likely than I did.

Nevertheless, I overcame her doubts and enlisted her assistance in getting me together with Gates. I even managed to drag her along as we met him in the shaded-solid heights of the San Jose Fairmont on the opening day of the Seybold Conference.

He had been on a panel earlier that morning with John Warnock and Steve Jobs. The panel was another episode in the soap opera which began at the previous year's conference, when Gates announced his alliance with Apple to create a font and page description standard to compete with PostScript.

I wasn't encouraged by what I saw. Questions directed at Gates by Jonathan Seybold and from the floor had disappeared into a dizzying welter of elaborate, self-justifying obfuscation. One might as well debate a dust devil, I thought.

Fortunately, the person I encountered upstairs was both more human and more forthcoming. He is a slippery fellow to be sure, and his sense of aesthetics and design is very different from mine, but I came away both respecting and even *liking* Bill Gates.

We began at odds:

That was an interesting thing Steve Jobs said this morning, calling NeXT the BMW of the business and Microsoft the General Motors.

What do you think about that?

Hm...The analogy doesn't quite hold up, because in the case of BMW and GM they run on the same gas and they drive on the same roads. And so somebody could get up who runs high end 486 machines with lots of memory and disk...say, a Compaq—could get up and say they're the BMW, and then Acer could get up and say they're the GM, because they're talking about the same roads, the same applications, the same disks, the same gas.

In Steve's case, he's saying, "Hey, we're going to lay down a whole new road system, and a whole new user interface, a whole new set of training," so the analogy's not quite the same.

Barlow: "How would you define your sense of mission?"

Gates: "The PC is the tool of the information age. A personal computer on every desk and in every home. Using great software. And software standards as a way to make that happen."

They say he sold ten thousand last year and DOS was about fifteen million, so that's a little higher volume ratio—I mean, I don't want to denigrate GM or anything...

Maybe the DeLorean—

Well, even the DeLorean drove on the road. It used gas, as far as I can remember. Clive Sinclair had an electric car, so that's different.

Hey, Steve's stuff was nice. That was a nice demo. And if I thought that stuff could only be done on his machine, I'd be saying, "Hey, it's going to be like a Mac. It's going to sell pretty well." But the real question is, can we do those things, which are cool, and have compatibility with all the applications, the so-called mainstream stuff that's out there? And my proposition is, you bet. No problem.

So you think that Windows can have the same kind of elegance of execution, ultimately, that the Mac and the NeXT machine did.

I don't know why you say "ultimately."

Well, now we're talking about matters of taste. But when I use Windows, it doesn't feel as fluid to me. I don't think there's the same degree of intuition built into the system that there is with the Mac, which is what I ordinarily use. And based on what little experience I have with the NeXT, the same applies there.

Do you use applications at all?

Yeah, I use yours, largely.

Then it's hard to understand why... When you're inside Excel, how do you know which machine you're on? How do you tell? Do you keep looking at the logo and saying, "Mm. Not as elegant. Not as elegant"?

Is it the logo that kind of sets you back?

No, but whenever I want to copy a file, or leave the program, or get back to the operating system... You're quite right that in Excel...

You're saying the shell, it's something about our shell you don't like.

It doesn't have the same kind of fluidity of feel to me.

Have you used 3.0 much?

Yeah, but as a Mac user I wouldn't claim that I use it all the time. Perhaps I'd get used to it. But I didn't feel as comfortable with it.

Well, the first graphical system you get involved with, just like the first editor, the first spreadsheet, you get very used to, so if you've been used to using the Mac, I say hey, keep using the Mac. Mac's a great machine. Apple's going to keep improving it.

If you first use Windows, and then you move over to Mac, you'd say, "Hey, where's dynamic data exchange?" Where are a lot of facilities that Windows has, things you've gotten used to in that environment? All I can say is, these questions are often decided in the marketplace, and Mac is quite successful and Windows is quite successful, so clearly there are people picking both of those things. Those are the two mainstream standards on the desktop that we're going to support very aggressively with applications.

Do you think that the marketplace optimizes for ease of use?

What do you think it optimizes for? It optimizes for the best product. I mean, it's a free country. People buy whichever product they want...

If the marketplace optimized for ease of use, then, for example, Excel would've long ago started outselling 1-2-3, and the Mac would have long ago outsold DOS.

Well, it's just not true that...there's a tendency to underestimate the benefits that the breadth of DOS applications brings. That breadth of applications is a real benefit to people. Ease of use has to do with—go over to your colleague, exchange a diskette.

Do you think carrying that machine around [Mac Portable]—you call that ease of use? So in that sense, DOS is far easier to use. There's only thirty guys you can choose from who make machines a third the weight and more powerful than that, and less expensive, and that's a form of ease of use.

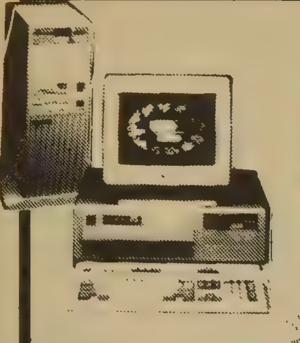
And 1-2-3, if nine of your colleagues are using it, the easiest thing for you to do in terms of getting support and exchanging data is to use 1-2-3. So I think, yes, it's driven by ease of use, in a very fundamental way. And that's why Windows lets people keep running their DOS applications, and lets people do data exchange with those applications. Ease of use is the criterion; we have to be careful not to define it in terms of our own biases and our own experience, because everyone gets focused around a particular set of things based on how they learned this stuff to start out with.

But my proposition would be that, hey, Windows is an important standard, and yes, we're going to keep pushing it forward. I react negatively to your comparison, because in many ways the Mac is better today, and in many ways Windows is better today. They both have a bright future, a lot they need to do that they don't do today.

What about NeXTstep? To answer your statement that the Mac is what I'm used to, I'm seriously considering going out and buying a NeXTstation just because I like the operating system as it's advanced in 2.0. It feels very easy to use, easier than the Mac and more elegantly worked out. Do you think there's the possibility that other people are going to have that response to it?

Not enough that I've chosen to write applications for the machine.

Betting on platforms—I'm paid to do that. I bet on the Macintosh, Lotus did not. Ashton-Tate did not. WordPerfect did not. I believed in it. Steve brought the company, we kept working on our Mac applications. We think it's a very important platform and we're going to keep



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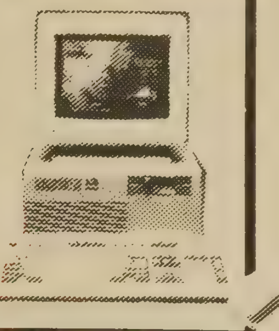

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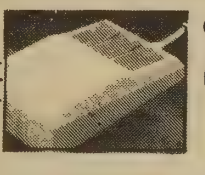

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doing that. On some of these other platforms, of which a new one comes up every month, we've chosen not to, because we want to do the best we can on Windows, Mac and OS/2. Those are our three primary platforms. If I thought something was going to sell at the level of the Mac, then it'd be worth diverting some resources to work on that. As yet I just haven't made that decision.

> **Gates: "The benefit of being able to exchange applications and exchange data is immense. As long as we can provide all the new things in an upward-compatible fashion on top of the PC standard that's been so valuable, that's what people want to stick with."**

Wouldn't you say that your development on the Mac was worthwhile even when the Mac was a very minimal part of the market—which I guess it still is—because of the development practice it gave you for graphical user interfaces?

Actually, that's true, but it's also a very profitable business for us, selling Mac applications. There are a lot of user benefits because of the cross-platform compatibility you get using Word on the two platforms, or Excel on the two platforms. But even taking it by itself, it was a very, very good decision.

It seems to me that what the NeXT offers, and what Sun is starting to offer, is the opportunity to develop for a network...for real groupware. Whereas using even Windows on top of a Novell system doesn't have the same kind of interoperability...

What do you mean? I mean, those are just words! Have you used Lotus Notes?

Yeah, you're right. Lotus Notes is a good program.

But interoperability? The bits don't move, somehow? When Steve says move, the bits move, and when I say move, they don't move? I mean, let's be serious. We have more interoperability than they do. This is the way networks are built. You have this thing called NetBIOS, you can take bits from any machine to any machine. Seems to work for nodes, seems to work for InfoAlliance, seems to work for file sharing, seems to work for LANMan, seems to work for Novell. There's nothing there—there's no fundamental piece that's letting people do cooperative applications on those platforms in a way they can't on the mainstream platforms.

So you feel you're going to be able to develop groupware under Windows on a Novell network as well as they can do it with UNIX as the background.

Well, for client-server you need a general purpose operating system running on one of your servers. So you can keep your Novell servers and do file sharing with Novell, but Notes requires an OS/2 server, InfoAlliance requires an OS/2 server, FileShare requires that, SQL Server requires that. So somewhere on your network you need to get an OS/2 server. But the best intergroup applications are being written to our platforms, for good technical reasons as well as the opportunity to sell them into the real world.

John Markoff [of the New York Times] asked you a question down at Stewart Alsop's conference which I want to repeat because I thought your answer was interesting: Do you see a possible Balkanization of operating systems based on products from various companies, whether NeXT or Santa Cruz Operation or whomever, coming in and competing on the same platforms with you?

No, the benefit of being able to exchange applications and exchange data is immense. As long as we can provide all the new things in an upward-compatible fashion on top of the PC standard that has been so valuable, that's what people want to stick with. Go ask end-users, if we can evolve in the right stuff, if that isn't the best approach for them. Go ask software developers, if having this mainstream DOS platform hasn't been the best thing for them in terms of developing the application once and selling it to that large base of people. Go ask Egghead if they want to buy stores five times as big just to inventory software just to sell as much as they are today. There's no reason for Balkanization—the standard had a merit of its own.

Manufacturers didn't want to see one standard develop—DEC had their own PC, TI had their own, Wang had their own. Even IBM persists in the notion that theirs is becoming the model by which compatibility was defined. They didn't aid and abet that—we were the ones who went out, licensed DOS to a lot of people. Intel made the chip available to a lot of people, and this standard was created. And that's what allows some new software company to come in, write an innovative application, and see those fifty million users out there as a potential base to sell to. If things were Balkanized, you wouldn't have great software. It wouldn't hold up.

The strength of the PC standard is greater today than ever. It's only within the industry that you see this thing about "Oh, that one's cute, maybe some of those would sell"; "Oh, I like that neat feature there, maybe that one'll sell." You could say the same thing about spreadsheets—I can't tell you how many spreadsheets with cute and neat features have come along, and yet what does it come down to? There's Lotus, and there's Borland with some staying power, and us with some staying power, still a fairly small part of the market. So cute stuff doesn't make it. People want real standards.

You said something intriguing this morning about the positive feedback loop that one gets into by being there first and establishing a high degree of presence in the market. Do you think that that's why, as you say, cute spreadsheets have not been able to make inroads against Lotus?

If you get in there first, you get training classes. People understand it. Data files, add-on software, books—people's fingers just start to work a certain way, and that's momentum. It takes something really radical, a big step forward, to break that momentum.

Excel's been able to capture some market share, but the biggest problem is that the graphical interface wasn't mainstream under DOS. On the Mac we have some huge market share, because the graphics interface is mainstream and we were the first spreadsheet. On DOS, as long as GUI was niche, Excel was niche—and pretty darn good niche. Credible in a lot of leading-edge places. Now that GUI is mainstream, Excel has an opportunity to really break out; in fact it's very clear that unless Lotus gets a Windows product out very quickly, and it's a great product, Excel's going to take a very strong position. They know that, they're doing their best. That's healthy competition.

Being there early—if the guy who gets there early does a good job, it blocks out all but the generational improvements from having influence.

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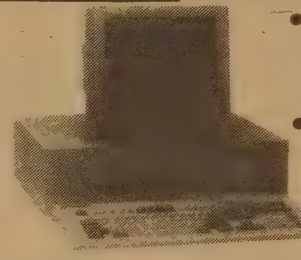

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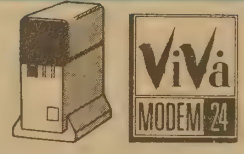

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This makes me think about Adobe. What I heard John Warnock saying today was that he was proposing PostScript as the new ASCII, in essence. If he were to prevail in that, wouldn't it make it easier for people to have a lot of different operating systems, because truly dense data would be very portable from one platform to another?

Well, operating systems run applications. Unless there's a standard for memory management, multitasking, threading, file systems, protection, all those tricky things, you're not going to have commoditization of operating systems, because operating systems aren't steady. John himself acknowledged that the most important standard is not the type he's talking about, flat data standards, but rather the object message standards. Those are going to be the ones of greatest importance.

So what he's doing is backing this thing where you have specific encodings. Lots of important stuff now is where you don't actually look inside the data, but you agree on some messages about data. And that's one of the innovative things we're doing in our operating systems. It's a state-of-the art thing; many people do it, some of them look better than others, and it's not good to try and say, okay, we'll all do it exactly the same way. Because of the position of our operating systems, I think ours has a chance of having some real impact.

> "It's exciting to be involved in building tools that I think can make jobs a lot more interesting. I think this information age is a good thing. I think it's empowering to the individual. I think it makes the world a richer place."

Because of its established institutionalized market share?

And because I think the work we're doing is great. Good combination.

Before Windows 3, when the future looked to be OS/2, I had a developer tell me he knew there was going to be a huge market, because it was a Microsoft product, but he didn't want to go to the trouble to develop an application for an operating system whose development manuals started out weighing more than he did.

What about ease of development? If other operating systems become easier to develop for, doesn't that put Windows in a disadvantageous position?

Thank goodness that's not true.

You think Windows is easy to develop for?

I don't think any operating system is easy to develop for.

It's easy to develop easy applications, and inside a corporate setting, that's great. You can take a tool like ToolBook or Excel or Choreographer or Easel—there's an immense number all available under Windows to write easy applications. Those are great things inside corporations.

But if you want to compete and make the best desktop publishing package or the best word processing package—let's not joke around. I don't care whose operating system it is, you're going to have to get your hands dirty and write some hard code and try and make it fast and do a great job. It's very, very competitive, and nobody can tell you that it's going to be easy to write a winning application in their environment.

We do lots and lots of things to make it easy to develop for Windows, in terms of coming out with better tool kits and even better tools coming along. People see the opportunity—they say "Hm, there could be better tools for Windows," and they write them. They sell them. Borland's going to be coming along with some stuff, we're coming along with some stuff, and tons of startup companies are doing and have done great work there.

You told me in Laguna Niguel that you didn't consider Windows to be a tactical retreat from Presentation Manager, and yet it seems you're not quite talking the same line that you were a year or two ago when you described a future based on OS/2. Now you seem to be talking about a future being based on Windows.

Well, Windows will run on OS/2, and so OS/2 is the future. That's unchanged. Running the Windows APIs on top of OS/2, that has increased in importance to us, making it easy to move up from Windows to the more advanced OS/2 kernel.

But we have been totally sending a Windows message from 1983. IBM wasn't sending a Windows message because they hadn't licensed it, and so a lot of people said, "Okay, Microsoft says Windows now, OS/2 also important. IBM says OS/2," Hey, the ones who think IBM primarily sets the standards by itself, they probably said, "Oh, let's go with OS/2."

The people who looked at what we were doing—and this includes Lotus, WordPerfect, Software Publishing—we said, "Hey, our applications group is in Windows now; we've always been totally open about that; we think it's the best strategy, start there." Some did, some didn't. And given the success of Windows, the people who did are enjoying some volume sales because of that. The other people are coming along. There's nobody who's holding out. I don't know any significant developer except maybe Claris who isn't developing Windows applications.

Just out of idle curiosity, why did it take you so long to move Word to Windows?

It's a lot of work, and you want to come out with something new. Actually, the idea of tables being in a word processor I came up with for Word for Windows five years ago, and so that's how long we've had the project. We invented the ruler and the ribbon four years ago, the idea of putting the most recently used files on that file drop-down, the idea of command wells four years ago—by the time we finally shipped the thing, I'd forgotten all this cool stuff we'd done. Then I went back and started using it a lot more, and I said, "Yeah, it's impressive that the stuff we thought of so long ago is still pretty innovative."

Tables actually showed up first in the Mac product and were very well received, and now everybody's got to have tables. But that was a first, and I think we did it in a pretty nice way.

It does take a long time to get the right speed and the right usability and make sure you're not just porting… We have a great word processor in character mode—why do Windows Word unless it's a big step forward above what can be done in the character world?

You were talking about things that you personally did, and I was thinking this morning that, of the large companies, you and Warnock are the last engineer CEOs. Do you still have the opportunity to exercise your skills as an engineer?

Absolutely. In terms of the design of the product, the algorithms, that's what I enjoy the most.

You'd also have to put Philippe Kahn on that list—which was started first, Adobe or Borland? Borland, I'm pretty certain.

> **"Let's say I raised the prices on DOS. I'd lose market share very, very quickly if I did that. We need to price the stuff very aggressively and come up with more upgrades."**

Borland was started in a lot smaller garage, so it went unnoticed for longer...

Well, he's better at glamorizing his beginnings than the rest of us.

Well, he has easier beginnings to glamorize...

No. Dropping out of school when there was no industry to go to MITS? They have no money, they're a bankrupt company, they don't pay us, we're staying at the Sundowner motel...

We grew out in the country. The Homebrew Computer Club—who started that? We went out in the MITSmobile, got those guys together, we had all these materials to hand out about how to start users' groups. The power in the MITSmobile would knock everything out, they stole the paper tape of BASIC, everybody was stealing our BASIC, we weren't even making enough money to even fly home... I wrote this letter to *Computer Hobbyist* saying, "Hey, you shouldn't steal software."

That's when Philippe was still a math student in France and Steve was off in India trying to be cool and Warnock was in his cushy laboratory at Xerox. We all have good stories.

Yeah, it's totally false to think of your beginnings as being with IBM.

Absolutely not. I had much higher market share in this business when IBM came to me than I have today. I mean, maybe I would be better off if they didn't come to me. I've just lost market share. It's been a *disaster!* What happened?

[*laughter*]

There's a strange thing. From '75 to '80, what were the dominant machines? Apple II with our BASIC. Radio Shack with our BASIC. Commodore with our BASIC.

CP/M was actually a fairly small part of the market; it was an interesting part that we participated in, but we were the ones that adapted CP/M to different people's machines. Digital Research didn't like to get their hands dirty, so we did all these adaptations.

What was the most popular form of CP/M in all that time? It was a product we did called the SoftCard. We were [DR's] Gary [Kildall]'s largest licensee with a Z80 card that plugged into the Apple II. So the role we played then... there weren't many people. We had a much stronger position.

When IBM came to us, they came to us because they wanted to get something done quickly, to prove that they could get something done in a year, on this machine where they had a 20,000-unit forecast. So they wanted to do an 8-bit machine, stick our BASIC in there, and prove that at least they could get that done. It was our fault that it became a 16-bit machine and we were forced to write a whole new generation of software. And were able to use that as the foundation of

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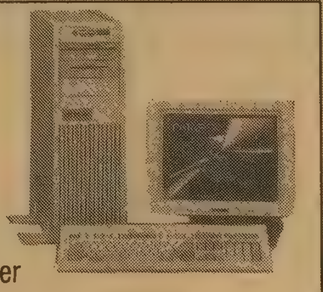

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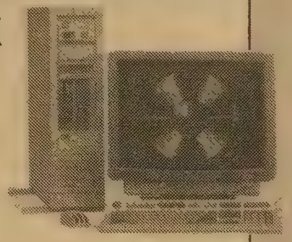

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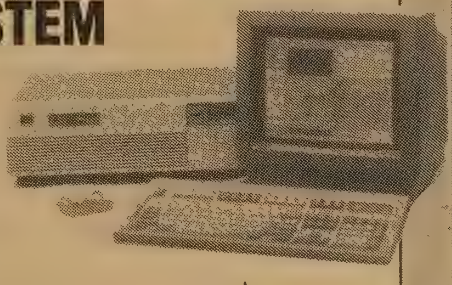

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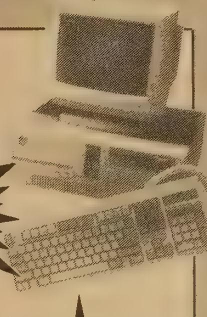

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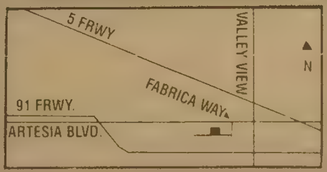

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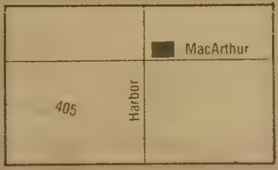

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a strong standard.

How did that happen?

Well, the engineer on it was actually open-minded to this change. They kept asking us to do comparisons to the Apple II, and we kept saying, "If you go 8-bit, that's not something new." Intel bid the 8088 at a very low price, which was critical. There were a few guys on the project—they had thirteen guys in total—who wanted to put the diskette in. Once you got the diskette in, then we were golden. Because once you get the diskette in there, we could prove to them you need a DOS, you need more than BASIC, and sure, BASIC can be in ROM, but the DOS is the key thing...

It's a long story.

When you first dealt with IBM, was it your intention to write your own DOS?

No, that's this long story. They came to us with an 8-bit machine with crummy graphics and wanted BASIC. We said, "Don't use the 8085, use this 8088 thing." I said, "Oh, there's this company called Digital Research," which they'd never heard of.

I called up Gary and told him these guys would be coming down. So they flew down, Gary wasn't there, Gary's wife wouldn't sign the nondisclosure agreement for them...

So you actually sent IBM away?

No, no, no, no. We said okay, we'll do all the languages and everything, but let's go see...

Gary hadn't done a 16-bit version. The only 16-bit operating system at that time was a thing that Tim Patterson had done called QDOS, Quick and Dirty DOS.

Anyway, so then Gary wasn't that interested and we decided that it was a mistake, that given the tight time frames and the central position of the OS, we should do the OS ourselves. So we told IBM, "Hey, don't worry about it, we'll do this." So we went from agreeing to do 200,000 new lines of code to about 230,000 new lines, then we bought QDOS and hired Tim Patterson from Seattle Computer Products. And Tim came over and Tim and three of our guys did DOS version 1.

Then, late in the game, about four months before the machine ships, Gary said, "Hey, IBM, you've got to include me." So IBM said, "Okay fine, we'll ship CP/M 86 also." So he did a packaged product with CP/M 86; he chose to price it very high. We went around to the ISVs and tried to get them to favor us. It took 2 1/2 years, including backing by Wang, Zenith, Victor (long forgotten) in order for us to establish an edge.

And once you get an edge...

Positive feedback loop!

I mean, we had Balkanization. It was beautiful Balkanization—we had three operating systems, we had DEC with a better keyboard, TI with better graphics, all this Balkanization.

And what did the marketplace do with all this Balkanization? They just kissed it goodbye.

You're right. People want a standard. They want familiarity.

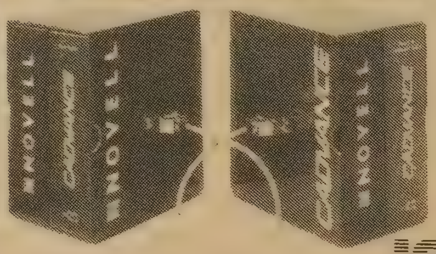
And will it come back? I don't see what would cause it to come back.

I mean, fundamentally you just have to ask yourself, is there anything you're seeing on any of these non-PC machines that can't be done in a great way on the PC? And get rid of your sentimentality.

There are mysterious aspects of execution that I have a hard time defining but nevertheless I know they're there. It's kind of like Zen and the Art of Motorcycle Maintenance—you don't know how to define quality but you know it when you see it.

You're kind of an insider.

Well, that's true, and I admit it's a major factor. Most people are not very familiar with the technology. They make purchasing decisions



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based on the familiarity of the product. If you have a large name recognition, then people buy it.

I want to back up a bit—there's a possibly mythological notion that a lot of DOS was already intact when you bought whatever you bought from Seattle Computer Products.

Tim was the primary author of DOS version 1. Of what we shipped in DOS version 1, Tim wrote the majority. But he was an employee of Microsoft when he did most of that work.

The stuff that we got when he came across—there were some real shortcuts in QDOS. But by the time we shipped it was a pretty good product. We had to write a dramatic amount of new code to do MS-DOS version 2. Tim participated in part of 2, and then he went and did a compiler after that, and 3 he was not involved in. 4 was work done primarily at IBM, and for 5 Tim's been off working on other stuff.

This makes me think about your version of OS/2 and IBM's. Do you see OS/2 2 and OS/2 3 developing into completely different systems eventually?

No. Absolutely not.

They're bound to be similar all the way to the fifth edition, sixth edition at least?

When 3.0 comes out it replaces 2.0. It replaces 2.x. Throw it away. Give me a point in time, and only one of them is important. Before 3.0 ships, until 2.0 ships, 1.x is important. When 2.x ships, 2.x is important. When 3.x ships, that's what's important.

So you're working on version 3 now, IBM's working on version 2.

Well, that's too strong a statement. There are IBM people at Microsoft working on version 3. There are IBM people at IBM working on version 3. The majority of the people are at the primary site, which is Microsoft, and the majority of those people are Microsoft people. I have about forty people at Microsoft who are working on 2.0; they spend a lot of time at IBM, helping out with 2.0. There's a lot of coordination with what's going on with 2.0. Whereas before it was 50-50 across the two sides, now we have this primary site concept. So both companies are not only fully licensed for everything that gets done, we're very involved in everything that gets done.

Mitch Kapor said that we're well into the computer age and we still haven't seen our Henry Ford yet. While that may be true, I think it's possible that we have seen both John D. Rockefeller and Standard Oil...in the form of you and Microsoft. What do you think about the possibility that Microsoft is going to be the Standard Oil of computing in the 21st century?

That's a pretty nasty question.

I didn't mean it to be a nasty question. I don't mean Standard Oil as a golemic kind of—

What else could it mean?

Well, it means a very large, efficient—

Monopoly. What was efficient about Standard Oil?

It worked extremely well. It was so efficient that it took the government to break it up.

A monopoly that controlled the transportation.

I don't see any analogy at all. All the businesses we're in are very, very competitive. Word processing. Networking. When I name one that's not competitive, tell me. Spreadsheets.

Operating systems.

Operating systems is very competitive. There's very innovative work going on—Digital Research, see their ads, see what those guys

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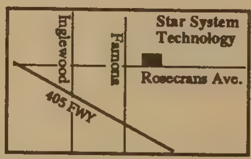

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are doing. See what hundreds of guys with UNIX are doing, whether it's Mach or Open Software Foundation or Santa Cruz Operation.

But expressed in terms of market share, they're not competitive. I get the impression that your sense of competition is based to a very large extent on market share.

No, no, no. Let's say I raised the prices on DOS. I'd lose market share very, very quickly if I did that. We need to price the stuff very aggressively and come up with more upgrades. That's the reason we're putting resources in this new version of MS-DOS as well as some new versions of Windows.

I've always been aware that the operating system is the one we have the largest market share in. I think if there's a Model T analogy, it's—hey, MS-DOS machines, we've got hundreds of manufacturers building compatible machines. Which meant that in terms of variety of choice, you could choose your hardware and still run the same software. That, to me, is a fundamental contribution. It creates a standard which led to a very large market. If Ford made a good contribution to the car industry, it was that they decided to do something to create a very large market, to prime the pump, to make the product of interest.

And I think MS-DOS—it's our product, but you've got to give credit to IBM and Compaq and Zenith and all those other companies and the software developers who came and got behind MS-DOS. They made that a standard, which made a real difference. We wouldn't be very far along if we didn't have that as a basis to build on.

If IBM had never decided to build a PC, would DOS have been a standard?

You bet. We would've picked another machine as the model for compatibility. It's a natural thing.

We wrote back in 1975 that we wanted a binary standard based on one instruction set. The level of interchange we had from '75 to '80 were programs written in Microsoft BASIC, so we could get people to write accounting packages and books of games. If you learned our BASIC, you learned our BASIC. That was a certain level of exchange.

But we knew from Day One that was inadequate. Well, in the 8-bit era, not only did we have a shortage of memory, we had the 6502s, Z80s, 6800, we had this multiplicity of microprocessors. We saw the 8088 as an opportunity to change that. In fact the IBM PC was not the first 8088 machine; there was a machine we did from Zenith and Mitsubishi before that.

So we did push for that standard. IBM, you know, they didn't make it happen—they went and sued a bunch of guys they thought had taken short cuts in building BIOSes and things like that.

It helped to have a strong company for other people to model the standard around. And we would have had to pick DEC or HP or who knows? We're now getting into hypotheticals.

Back around 1980 or '81 I decided that I wanted to buy a computer. And I looked at what was available, and figured that I would wait until IBM produced one simply because I wanted something produced by a reliable organization. And it seems to me a lot of people made that decision. People who didn't want to buy Apples. Didn't want to buy Victors.

Of the DOS market, IBM has about 30%. So obviously there are people like you and there are people not like you. IBM has played a very, very important role and done a very good job.

Well, I'm just thinking about operating systems. I knew there were a lot of different operating systems, I didn't know one from the next. IBM, I figured, would define that standard.

No, no. Until we got the hardware standard out there, we couldn't have the binary compatibility. The operating system is a piece of that.

Believe me, when they introduced the PC, there were three oper-

Continued on page 106

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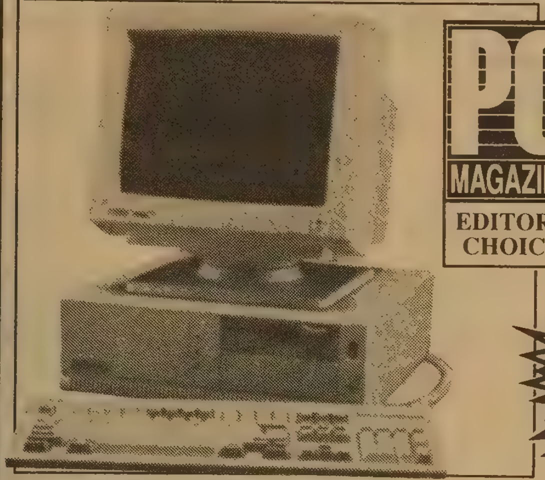

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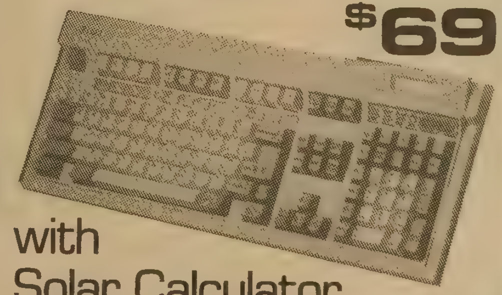

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Classy, Affordable:

The Macintosh Classic

BY MICHAEL ROBIN

With every delay in the introduction of new lower priced Macintosh computers, rumors multiplied and skepticism grew. Would it really be more affordable? What would Apple leave out to reduce the price? Would this be Apple's version of PCjr or PS/1?

But seeing the new Macs and using the new Macintosh Classic, my skepticism vanished. The Classic gives Apple a machine in the same price range as many PC clones, without sacrificing the features we expect in a Macintosh. It keeps the best of the original formula to introduce a solid, lower cost Macintosh computer.

A LITTLE HISTORY

Six models have been based on the original Macintosh design: the Mac 128K, 512K, 512KE, Plus, SE, and SE/30. The Mac 128K, unveiled during the Super Bowl in 1984, introduced us to a new concept in personal computing. Later, the Plus and SE built on the success of earlier models, each for a time enjoying status as the best-selling computer in the US.

The Classic follows in this tradition, offering a compact computer with the power and ease of use to do everything from word processing and spreadsheets to page layout and design to creating sophisticated graphics.

Replacing the Plus and the SE, the Classic is a streamlined SE at roughly half the price. It uses the same 8MHz Motorola 68000 processor and includes many of the same features.

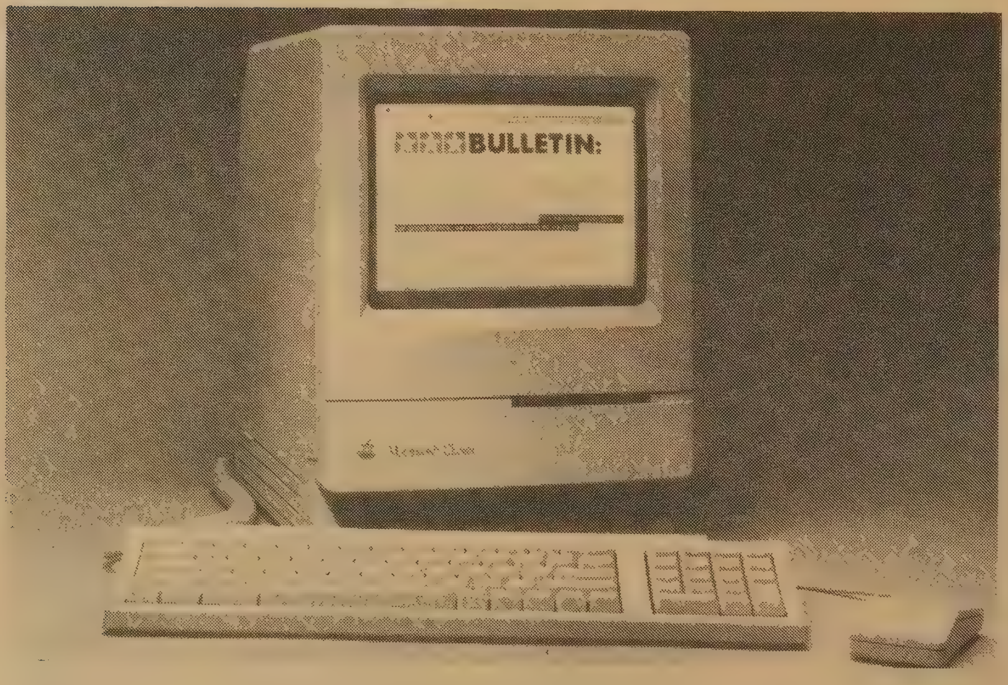
WHAT'S DIFFERENT?

For the everyday work of word processing and database maintenance, the Classic seems to be a little faster than a Plus or SE. I tend to believe the performance improvement has more to do with the new hard disk, at least when compared to the SE. The new hard disk is also significantly quieter than the internal hard disk Apple installed in my SE several years ago.

The Classic comes with a new Apple keyboard I find much more comfortable than the one on the Plus, but a little softer than the standard SE keyboard.

Overall, the Classic is quite similar to the machines it replaces—the Plus and SE. The most striking difference is the price.

In order to get that lower price, Apple has made some changes. The first was in corporate pricing policies, making the decision to sell lower priced machines with smaller profit margins. Once that decision was made, design changes were made to cut costs. Apple has made a handful of modifications to the SE's architecture in creating the Classic, but it still includes the features that define the Macintosh computer.



Apple's new budget-priced Mac Classic offers solid Mac features and good performance.

At around $1,000 this is a great computer at a great price. At a lower price—either dealer sales or student discount—who could pass this by?

The Classic has a single floppy drive, rather than two. There's no hard disk light, and the display brightness knob has been moved inside, onto the Control Panel. There is only a single ADB port on the back, and the internal expansion slot was removed.

In the SE, the internal hard disk replaces the second floppy drive. Most SE owners have an internal hard drive, so they're really using a configuration like the hard disk version of the Classic. If you need a second floppy drive, there's still a port on the back for it.

Not having a hard disk light means you're not as able to monitor what the disk is doing. If this is something that bothers you, it's easily resolved. Norton Utilities, for example,

Continued on page 114

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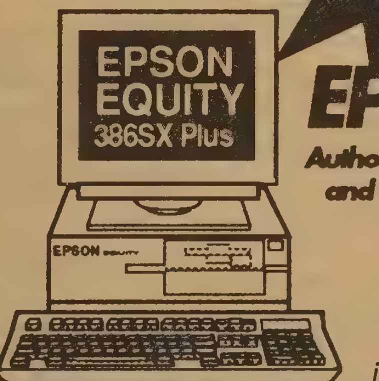

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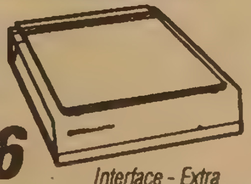

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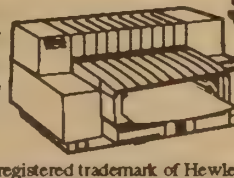

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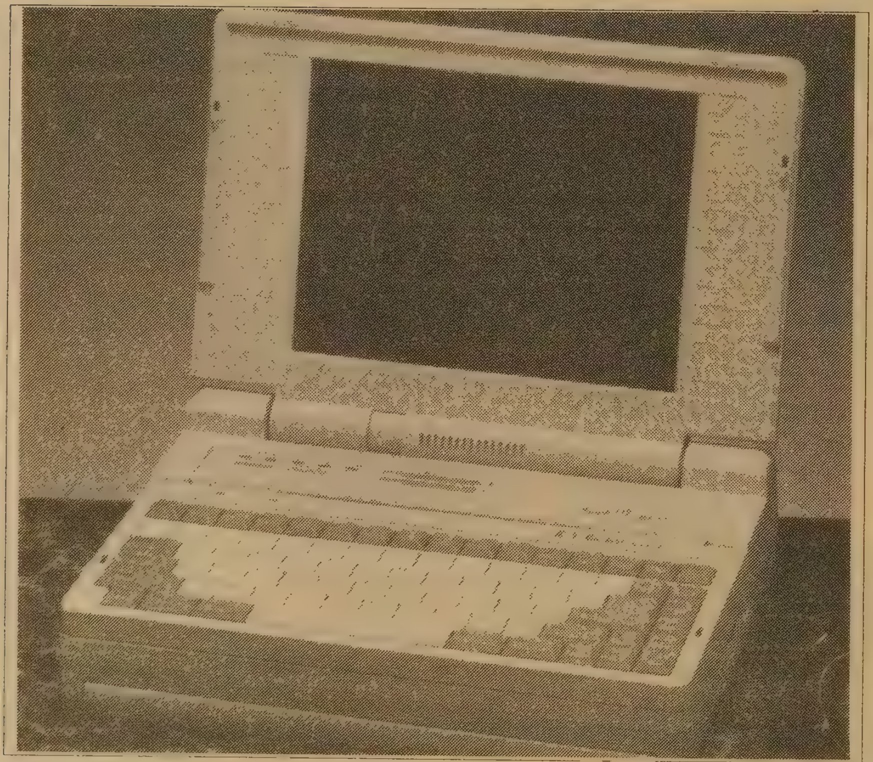
PRODUCT SPOTLIGHT

New Products

PORTABLES

TWINHEAD SUPERLAP 386SX

The SuperLap 386SX is the latest entry by Twinhead Corp. for the North American market. Built-in features include VGA graphics displayed on a 10" Supertwist sidelit LCD screen; high performance interleaved and paged main memory with a 16-bit data path; a parallel port and two asychronous serial ports. The standard system also includes a 1.44Mb floppy disk drive, a 40Mb embedded-controller low-power hard disk drive, and a detachable keyboard. The SuperLap 386SX is shipped with a factory installed 2400 bps, Hayes-compatible modem. Network interface cards, a special video graphics processor card for presentations, or a dedicated fax modem card can be added for greater flexibility. ($2995) Twinhead Corp., 1537 Centre Pointe Dr., Milpitas, CA 95035. (408)945-0808.



LIGHT NOTEBOOK FROM TANDY

The new Tandy 1500 HD notebook computer is surprisingly light—weighing under 6 lbs., including battery and standard floppy and hard drives. It has a NEC V-20 micro-

continued

PRODUCT UPDATES

- ➤ **Apple** has released **Macintosh System software 6.0.7.** It is compatible with all Macintosh computers with aT least 1Mb RAM. Available through all authorized Apple resellers, AppleLink and other electronic bulletin boards. ($49).
- ➤ **Borland International** is offering users of Microsoft C an upgrade to Borland's **Turbo C++ Professional** for $149.94, less than half the suggested retail price. This offer is valid for owners of Microsoft C or any PC-based C or C++ compiler through January 31, 1991. Borland International, Inc., 1-800-331-0877.
- ➤ **Central Point Software** is shipping **Copy II PC v6.0**. This new version, expected to be the final release of Copy II PC, supports the full line of PS/2 computers. Central Point Software, Inc., 15220 N.W. Greenbrier Pkwy, #200, Beverton, OR 97006. (503)690-8090.
- ➤ **Commodore** is offering a **$25 rebate** to purchasers of **AmigaVision**. This offer applies only to individual, standalone purchases, separate from a CPU, made at participating dealers between October 15, 1990 and January 31, 1991. Commodore Business Machines, Inc., 1200 Wilson Dr., W. Chester, PA 19380. (215)431-9100.
- ➤ **Computer Associates** will begin shipping in December **ACCPAC Plus Accounts Receivable 6.0.** Version 6.0 includes new features to provide greater performance and flexibility. SupportPlus maintenance subscribers and end-users purchasing AR, IC, OE, RI and SA between October 22, 1990 and April 22, 1991 will receive a full product upgrade at no charge. Other registered users of AR may upgrade for $200. Computer Associates International, Inc., 1-800-531-5236.
- ➤ **Cyrix Corp.** and **Micrografx, Inc.** are offering **$25 rebates** to customers who purchase a Cyrix FasMath coprocessor and Chrisma software package. This rebate program runs through December 31, 1990. Cyrix Corp., 1850 N. Greenville, Suite 184, Richardson, TX 75081. (214)234-8387.
- ➤ **Farallon Computing** has announced the shipment of **PhoneNet Liaison 3.0**, the only universal AppleTalk software router with Wide Area Networking capabilities. A site upgrade is available directly from Farallon for $75. The upgrade is free for all registered users who purchased Liaison after August 1, 1990. Farallon Computing, Inc., 2000 Powell St., Suite 600, Emeryville, CA 94608. (415)596-9020.
- ➤ **Innovative Data Design** has released **MacDraft v2.1**. There are two levels of upgrading to MacDraft v2.1. Upgrades for owners of MacDraft v1.2b or earlier costs $69. The upgrade for v2.0 costs $9.95. Innovative Data Design, Inc., 2280A Bates Ave., Concord, CA 94520. (415)680-6818.
- ➤ **Insignia Solutions** has announced **v1.4 upgrade** to the **SoftPC EGA/AT Option Module**, which greatly increases its performance for users running MS-DOS

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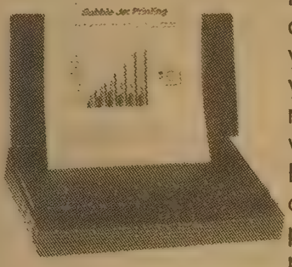

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processor and a clock speed of 10MHz. The 64K of memory, expandable to 1.64Mb, provides the power and memory to run most business and personal software. A LIM 4.0 expanded memory driver is also supplied to configure additional memory. Standard features include one 3.5" floppy drive, an internal 20Mb hard drive, MS-DOS 3.3, and Tandy's DeskMate personal productivity software. The 1500 HD has a high-definition, blue-on-white LCD display with 640 x 200 CGA color resolution. ($1999; an optional 1Mb memory upgrade is $399.95; a 2400 bps internal modem is $199.95) Tandy Corp., 1800 One Tandy Center, Fort Worth, TX 76102. (817)390-3487.

PERFORMANCE IN A NOTE

The Maxar Notebook PC is a 7 lb., 286-based 12MHz Notebook PC from Hyosung Computer & Information Systems (HCI). Standard features include a back-lit 640 x 480 VGA display, one 3.5" 1.44Mb floppy drive, a 20Mb

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PRODUCT UPDATES

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programs on a Macintosh. Registered owners of v1.3 of the Option Module will receive a free v1.4 upgrade package. Insignia Solutions, Inc., 254 San Geronimo Way, Sunnyvale, CA 94086. (408)522-7600.

➤ **PC Globe, Inc.** has released **PC USA 2.0**, a computer atlas program. The program's database has been updated and now includes population data from the preliminary 1990 US Census. Upgrades will cost $19.95. PC Globe, Inc., 4700 S. McClintock, Tempe, AZ 85282. (602)730-9000.

➤ **PowerUp Software** is shipping **Labels Unlimited 3.0**, which allows IBM PC and compatible users to produce top-quality, customized labels quickly and easily. Users can obtain upgrades by sending their 2.0 master disks and $25 or calling Customer Service. PowerUp Software Corp., 2929 Campus Dr., San Mateo, CA 94403. 1-800-851-2917.

➤ **Silicon Graphics** announced the **4D/35 upgrade** to the **Personal IRIS workstation**. The 4D/35, based on the 35MHz R3000A processor from MIPS Computer Systems, delivers 33 MIPS and 6 MFLOPS. Upgrades for existing 4D/20 and 4D/25 customers are $9000 and $11,000, respectively, depending upon configurations. Silicon Graphics, Inc., 2011 N. Shoreline Blvd., PO Box 7311, Mountain View, CA 94039. (415)960-1980.

➤ **Timeslips Corp.** has redesigned **Timeslips III**. V4.0 includes a new security system, expanded reporting capability, and many other new features. Timeslips Corp., 239 Western Ave., Essex, MA 01929. (508)768-6100.

➤ **T/Maker** and **Reference Software** have bundled WriteNow 2.2 and Grammatic Mac 2.0. The retail price of this special **WriteNow 2.2/Grammatic Mac** bundle is $199, a saving of almost $100 off seperate purchase price. T/Maker Co., 1390 Villa St., Mountain View, CA 94041. (415)962-0195.

➤ **Trius, Inc.** has released **Draft Choice 1.5**, a CAD shareware program. ($50) Trius, Inc., 231 Sutton St., Suite 2D-3, PO Box 249, N. Andover, MA 01845. (508)794-9377.

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- 2 serial, 1 parallel, & 1 game ports
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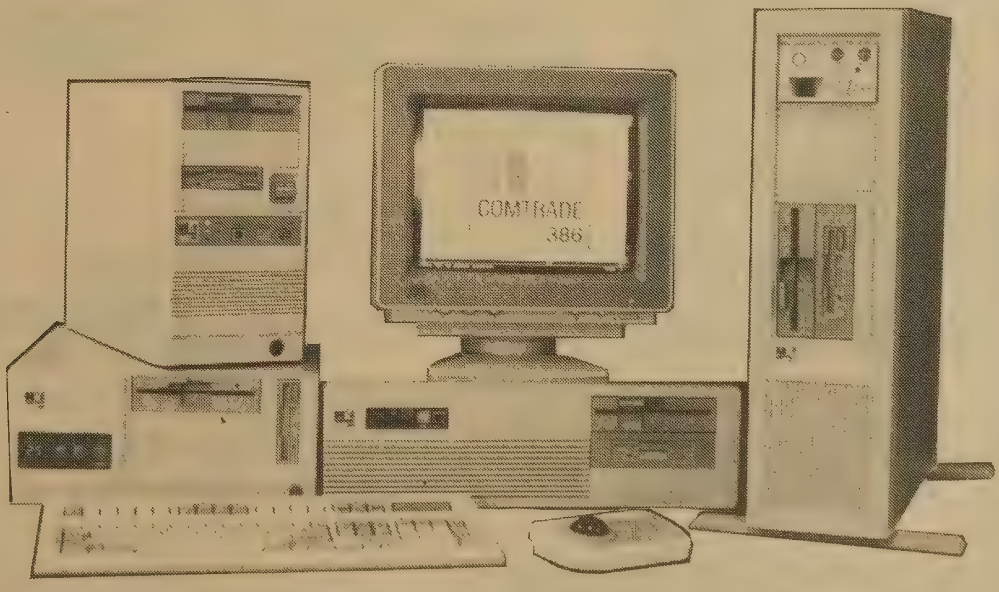

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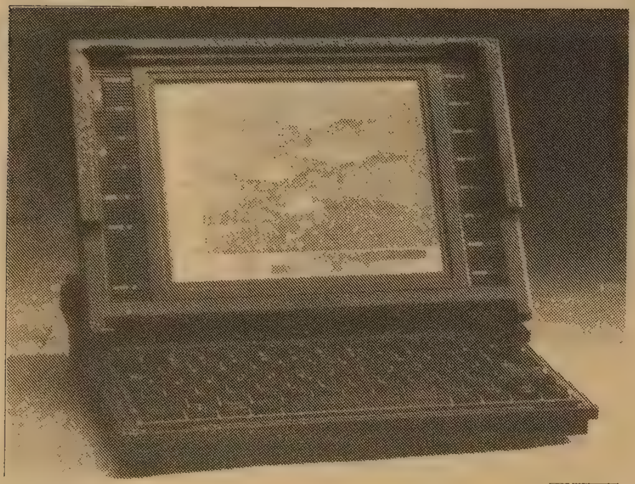

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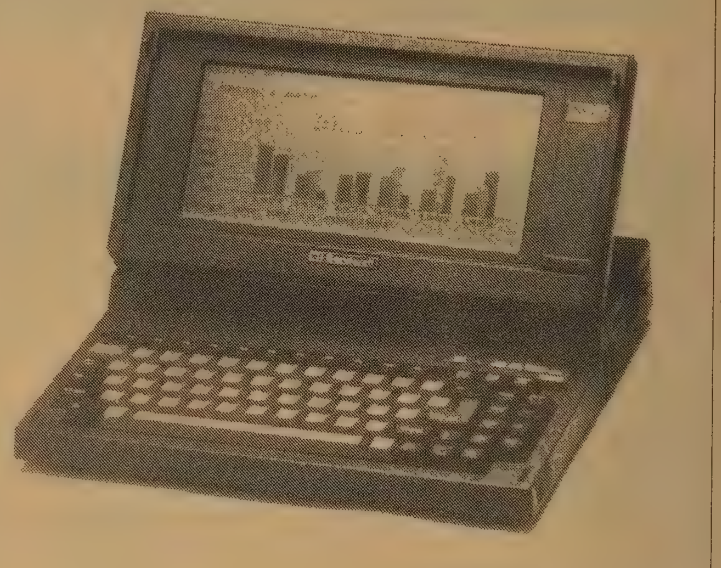

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HARDWARE REVIEW

WALKABOUT/SX LAPTOP COMPUTER

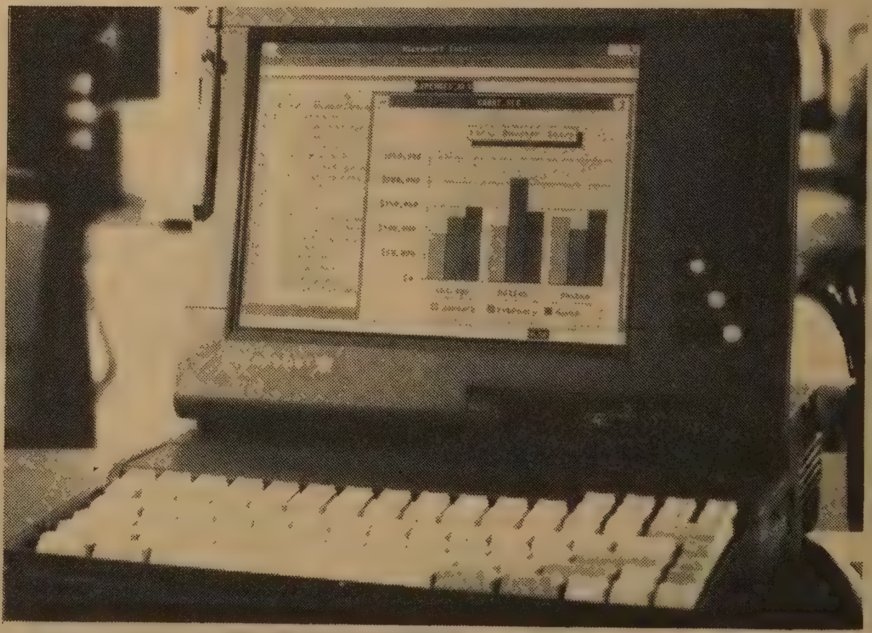
Manufactured By: Data General Corp.
List Price: $4,995
Reviewed By: Robert D. Athey, Jr.

Portable and laptop computers are the real workhorses for the traveling professional or the itinerant writer. I started my business eight years ago with a KayPro II that's been across the US a dozen times. Three years ago, the Zenith 181 I got was half the weight and a tenfold increase in capability over my older laptop. Many's the article I've completed for my German publisher as I was flying home from meetings. What possible upgrade could there be?

Data-General Corp., a mainframe computer giant, has been in the computer business for years. I recently got their Walkabout/SX and was surprised by this upgrade. This is an 80386-based machine with a 40Mb hard drive, 720K or 1.44Mb 3.5" floppy, and a pound or so lighter than the earlier laptop I had. It runs on an external NiCad battery module that smoothly plugs—making it seem like part of the case. The battery may be replaced with a 100-alkaline module for direct plug-in power, or that same module can be used to re-charge the battery, on or off the computer. The computer includes MS-DOS 4.0, along with seven disks of programs. The Walkabout/SX also has an internal 1200/2400 bps modem, and two 1Mb SIMM additions to memory. The modified AT-style keyboard comes with a separate attachable keypad.

The high-contrast backlit LCD visual display is only nominally black and white. It really looks more like a light beige and black in good low level light, but tilting the display can turn the black to blue, and strong sunlight turns up red hues. The display is VGA compatible, and the graphics are gorgeous. CIRRUS put together a graphics demo that starts with a San Francisco skyline that looks like a photo. They have devised a 32-shade grayscale to simulate the 256 colors, thus their demo shows a 16-shade scale pie chart with 13 discernable shades. On-screen controls let you do color reversal (white on black or black on white). Other controls manipulate the shade from gray to black, and control the amount of backlighting.

This computer has turned out to quite useful in large and small data items, and gives extra speed to the slow strategy games I love so much. I've put the entire book I'm indexing on it, and have generated 3Mb of working files searching for indexable terms.



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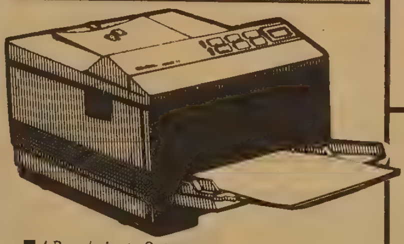

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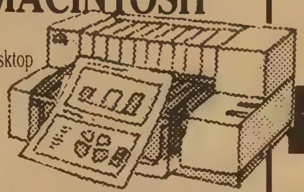

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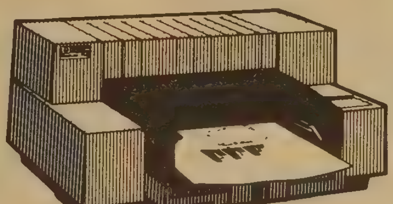

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All is not sweetness and light, however. Sometimes the depressed key clicks and doesn't enter the letter. There are several chapter files I can't access or erase because the modem transfer did something strange to the names (highlighted letters?). Two public domain programs I dearly love (SD and Master Key) don't work on this machine, the latter because it doesn't recognize the hard disk format. The red light that shows when the battery is getting low must be heeded. When the battery gets too low the computer shuts down and you lose whatever was not saved to that point. You are warned by a persistent beep, and you'd best hook up the power cord or shut down.

The check on the specifics of the machine speeds and capabilities with the PC Magazine BENCHMARK series of programs are all positive. Indeed, the nominal 16MHz is a bit of an underestimate; the benchmarks ran closer to 18MHz. All in all, I'm quite impressed with the Walkabout, and expect to happily use it for years. (Data General Corp., 3400 Computer Dr., Westboro, MA 01580. 1-800-DATA-GEN)

BOOK REVIEW

COMPUTER VIRUSES, WORMS, DATA DIDDLERS, KILLER PROGRAMS AND OTHER THREATS TO YOUR SYSTEMS

Written By: John McAfee and Colin Hayes
Published By: St. Martins Press
List Price: $16.95
Reviewed By: Robert D. Athey, Jr.

A book that has a title that belongs in the Middle Ages, but I tend to think simplistically of these things. This paperback book deals thoroughly with the issue of viruses for PCs and Macs. It describes what viruses are, what they do, and techniques to protect yourself from the ill effects. The authors have the background to be believable. McAfee is president of a Silicon Valley company, and is chairperson of the Computer Virus Industry Association. Hayes is a writer publishing on fraud, forgery, technology and management. You can purchase this book separately, or receive it as a premium with the Virucide software package from Parsons Technology.

My interest in this book grew when all three of my MS-DOS computers were infected recently by a virus from an unknown source. The virus ate RAM as time passed, so suddenly I couldn't use WordStar 2000+ or Publish It. Over a period of months I worked to get everything clean, re-low-level formatted, and installed several virus warning/protection programs.

The book, with thirteen chapters and three appendices, gives a thorough description of the steps needed to detect, disinfect and protect data, programs and disks. The book even gives program listings of some viruses (bad idea!?) and some projected threats by viruses on the horizon. The authors also review several anti-viral programs. (I was surprised to see their story that someone infected the public domain FLU_SHOT program, in one of its iterations. It is a program that I reviewed. ARG!)

This well-written book is divided so you can skip the super-techy stuff if you want to. The history of viruses is given, with its innocuous game-like beginning by the early students of programming. The history includes some of the more famous cases of infection, and how some got away even from their designers. The technical sections will be of interest to virus protection programmers, but will also be good reading for the computer generalist. This book should be in every public library, and the libraries of colleges, universities or companies with computers.

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	ST251-1	42 MB	R	190.00
Miniscribe	8425	20 MB	N	120.00
	3650	42 MB	N/R	180.00
	6085	71 MB	N/R	375.00
RLL				
Miniscribe	3675	65 MB	N	220.00
ESDI				
Miniscribe	9380E	347 MB	Fact. R	850.00
SCSI				
Miniscribe	9380S	347 MB	N	950.00
Quantum	Q280S	80 MB	N	375.00

*N = New R = Refurbished

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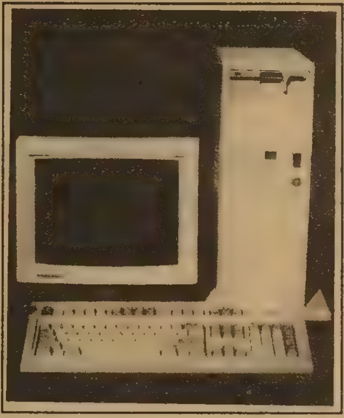

LapTop & NoteBook
(286 & 386)
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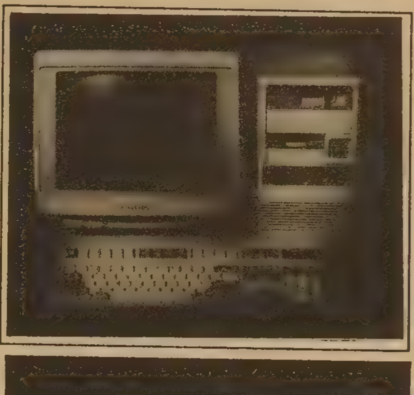
Information and Prices



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Essence 386 33MHz M/B w/64K Cache	$835.00
Essence 386 25MHz M/B w/64K Cache	$735.00
Essence Baby 386 25MHz M/B	$605.00
Essence Baby 386SX 20MHz M/B	$445.00
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Western Digital 93044 42MB IDE HDD (28ms,3.5")	$230.00
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Conner CP-3204 200MB IDE HDD (19ms,3.5")	$795.00
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Panasonic KX-P1624 Printer (24pin/182cps/132col)	$365.00
Panasonic KX-P4420 Printer (4ppm/512K/300dpi)	$785.00
Panasonic KX-P4450i Laser Printer (11ppm/512K/300dpi)	$1295.00
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- One TEAC 1.2M Floppy Drive
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- 2 Serial / 1 Parallel
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- 230 Watts Power Supply
- Keytronic 101 Keys Keyboard

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- Intel 80386-25 Microprocessor
- 64K High speed Cache memory
- 1MB Memory on Board
- Expandable to 2MB/4MB/8MB/16MB
- One TEAC 1.2M Floppy Drive
- IDE Floppy/Hard Disk Controller
- 2 Serial / 1 Parallel
- CS-15 Mid Vertical Case
- 230 Watts Power Supply
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386-33C

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- IDE Floppy/Hard Disk Controller
- 2 Serial / 1 Parallel
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Keytronic KB-101 101 Keys Keyboard (U.S.A.)	$48.00
Keytronic KB-101 Plus 101 Keys Keybaord (Large "ENTER" key)	$48.00
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CHASSIS

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14" GoldStar 1460Plus SuperVGA Monitor w/PVGA-1024 (256K)	+$430.00
14" ViewSonic 4 Multi-Frequency Analog Monitor w/PVGA-1024 (256K)	+$450.00

Continued from page 92

ating systems on there, and they laughed—do you favor one of these? Do you promote one of these? They were very even-handed.

What was the third one?

UCSDP system. Actually it was the only system they offered on their DisplayWriter. So there were cross-product operating systems.

Do you have a sense of mission?

Yes.

How would you define it?

The PC is the tool of the information age. A personal computer on every desk and in every home. Using great software. And software standards as a way to make that happen.

Why is that a good thing to happen?

That's a theological question, and some people might think it's a bad thing. Hey, there's lots of ways to look at these things. It happens to be that I enjoy working on that mission, I've been able to gather a lot of smart people around, it's been a lot of fun. That's what I'm doing. People can decide if they like it or not.

There's obviously a lot of nonsense that gets crowded into the ideology of personal computing, but a lot of the people talk about it in terms of what it's going to do for society or what it's going to do to human interaction. You have strong feelings about that?

Yeah, I think it's very positive. I look within our own company, at how people have ideas. By having access to information they can send mail to me or to anyone, they can challenge things. What used to be areas of specialization—are you thinking about the manual, or thinking about the testing?—now it's everything online. You not only can do things quickly, you've got people, you get to tap into more of their creativity. It's like they know what's going on, how their piece fits into that whole.

It's exciting to be involved in building tools that I think can make jobs a lot more interesting. I think this information age is a good thing. I think it's empowering to the individual. I think it makes the world a richer place.

Everybody can decide for themselves. I happen to think it's a good thing. It's not just that I enjoy doing it—according to my theology, it's good.

Speaking of organizations, I see your company as being highly horizontal and based on email. I see Apple being highly horizontal and based on email. And yet it works for you and doesn't seem to work for Apple. Why do you think that is?

I'm not an expert on Apple. Apple's a very successful company. They're a different company than Microsoft. They've had more turnover in their executive ranks. And for whatever reason that is, I know that it's helped us a lot to have incredible stability in our executive group.

We go out on retreats at least a couple times a year, and we talk about "Jeez, what are we doing in mail? Do we need to get into the consulting business? How can we work with the channel? Is our development approach state-of-the-art? What about our image—Big Is Bad—what can we do to show the good things we're doing? How to work with developers?" We go out and brainstorm about this stuff, and we love...Microsoft culture is we don't talk a lot about our successes, we talk about the things we're doing that we should do better.

From a distance, it looks like Microsoft is more of a tribe and Apple is more of a machine, in the sense that Microsoft has a mythic leader in the form of you, and Apple doesn't have that.

LOWEST PRICES GUARANTEED

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386-33 64K Cache	$1295
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286-16	$455
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Oh, they have John Sculley, who is, I think, a very good leader. It's a shame not to have what Steve Jobs brought to that company; it was a very valuable thing.

Apple's a very important company. They've invested a massive amount in R&D over the last four or five years, and their future is dependent on getting a lot of that R&D into concrete form. I think they have some super-good stuff they're going to contribute, and I certainly hope they do well, because I think it's a very positive dynamic to have another standard that is at critical mass pushing forward and taking risks. And certainly our advice to Apple has been to take risks in multimedia and voice and some of the really neat new things. I really hope they do that.

I don't want to compare Microsoft to Apple. But originally I got involved in this stuff because I was interested in organizations, and I thought of Apple as being the next thing in corporate forms. And at this point I'd say it's more likely to be Microsoft.

Microsoft has had the opportunity—we've been around a long time. We've made more mistakes than anyone, and missed more opportunities and things, and there's one thing I'll pat us on the back about—we see those mistakes and we learn from those mistakes.

And there's a few things like graphical interface, where once we decide we're going to do it, we just stick with it. Everybody thinks we're going to fail—"Why are you guys doing this? This is nonsense..." But we say, "Hm, we better make it better."

You don't spend a lot of time thinking about what the market wants before you take a new direction, do you?

No, you can't say that. We don't view that as the only input into the equation. There are some things that by seeing what can be done in hardware, and by understanding the underlying technology, we're willing to bet on—even though they're not at a stage where we can articulate it to end-users, they can understand it.

Then again there's an immense number of things—as we see Windows pushing forward, the vast percentage of that will be based on user feedback. There's this thing called object linking and embedding. And only in the vaguest way can I say end-users said to me, "Please! give me object linking and embedding! My insurance company depends on object linking and embedding!" [*laughs*] But it is sort of translating—actually, you saw quite a bit of it in this NeXT demo you just saw—the idea of mixed data. Where you have those little icons and those mail messages, that you could click on those things and there was the application. That's the key thing of object linking and embedding, is mixing those things around, not just in mail but also in a spreadsheet or a word processing document. Anywhere, you can have anything, and get to it.

That's what seems far out about the NeXT operating system to me. And I'm glad to hear that that's coming in your stuff.

It's coming with just changes in the applications. You don't even need an update in the system software. This is something you will see in Windows applications a lot next year.

It's good. [*laughs*] I think I saw it a few months earlier than I expected to.

To get back to Microsoft as an organization, it seems like you've managed to maintain, by some means or another, a human component there. The old organizational form—the Taylor School of Scientific Management form of organization—tried to eliminate the human content as much as possible. It tried to reduce everybody to some kind of homogenized unit that could be easily exchanged and replaced. That doesn't seem to be the way you run Microsoft at all.

We have a lot of unique individuals. This notion of how architects choose to work, how they choose to contribute to a company, that's very tailored to the individual. The way I work with the president is very tailored to how I like to spend my time, my particular set of skills. The way we do retreats or get together—it's all tuned to these differ-

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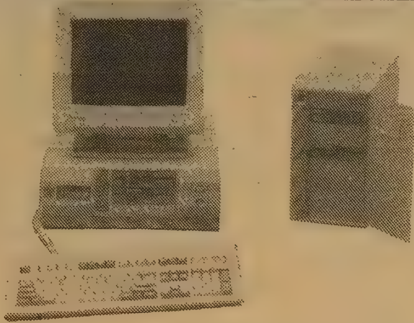

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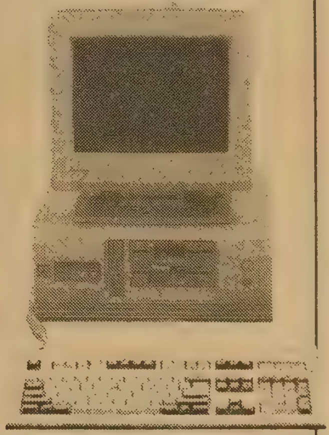

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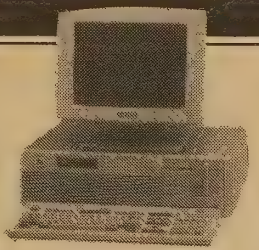

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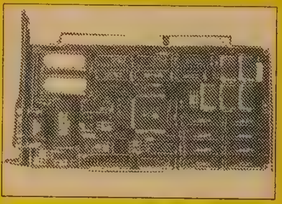

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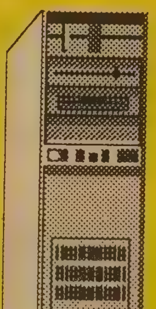

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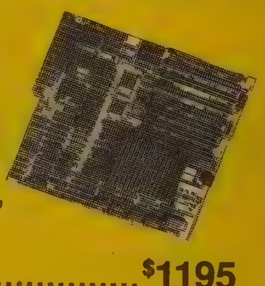

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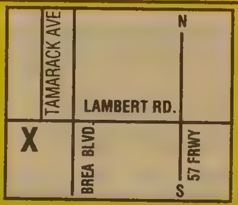

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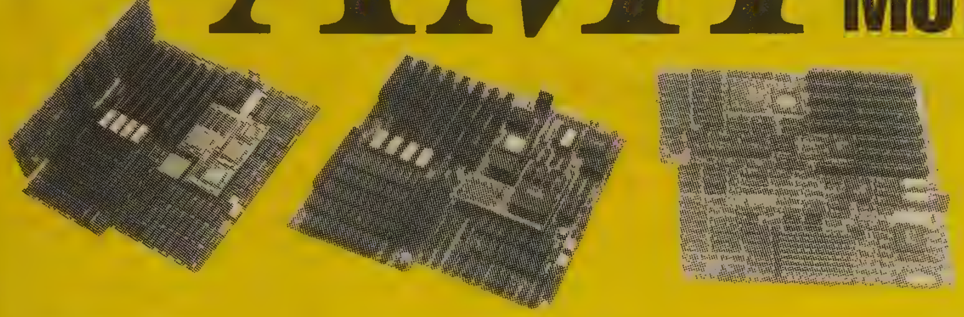

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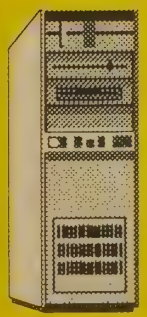

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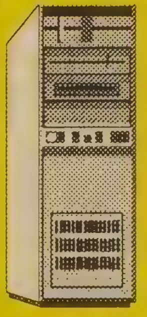

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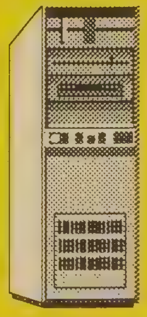

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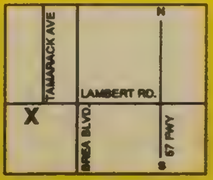

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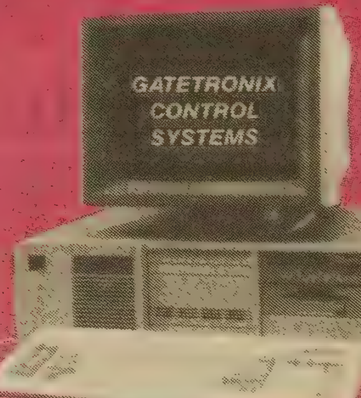

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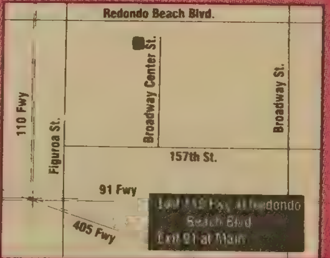

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ent groups. We have a lot of challenges because we've grown larger. Some things that were very easy to do as a small company are harder as you get large; people talk about "Yeah, you've got an advantage because of all of these products, your products will have synergy..." Hey, if we pull that off, that's an impressive thing. And yes, users will see some benefit there. It's certainly a challenge to us to have each product group winning in their category, doing the right things, and doing the things that are going to make the products work well together. And I feel very good about how we're proceeding about that, but it's not trivial.

"I've been able to gather a lot of smart people around, it's been a lot of fun."

I spend a lot of time on the Net, and I feel like what we're really up to here—the Great Work—is connecting human consciousness. And right now the wide area connections that work are all UNIX-based. Do you see Microsoft becoming part of that process?

What does that *mean?* Do you think corporate networks are based on UNIX? You think Arpanet is based on UNIX? What the heck?

No, not corporate networks. But Usenet is, Internet is, the developing networks that I experience seem to be... Well, I don't want to put too much emphasis on UNIX as the operating system, but there's an awful lot of UNIX there.

In what sense?

I think you're confused technically. Usenet nodes—you wouldn't know if the Usenet node was not UNIX. You would never know. Never. Send Usenet mail up to Microsoft and—[*gasps*] My God! It's an OS/2 server! I hate to tell you! Did it feel *strange*?

What is UNIX?

So it's just a coincidence that so much of the Net is based on UNIX machines?

Not a coincidence. But it has nothing to do with the technology. Nothing to do with it. That's a layer of protocols. UNIX is like semaphores and memory management calls.

Let me rephrase the question then. Are you folks thinking about how to extend and beef up email over wide areas?

You bet. There's a couple of things we haven't delivered a strong message about, whether at the systems level or the applications level. Mail—this is true on both sides—there's a lot we can do there. We've done some limited stuff—our Mac mail product is a great product, does very well, but it doesn't have some of this compoundness and breadth of communications stuff that's important.

We have some exciting work going on. We're talking a lot with the fax manufacturers about what it would mean to have an intelligent fax machine that can tie in, or looking at what elements of the mail should be built into networking software. This stuff needs to be more integrated.

But there's other areas we have to work on. We don't have a nice graphical database front end that's out. We talked about all the stuff we need to do in networking. There's an immense amount of work that's obvious that Microsoft should do. ■

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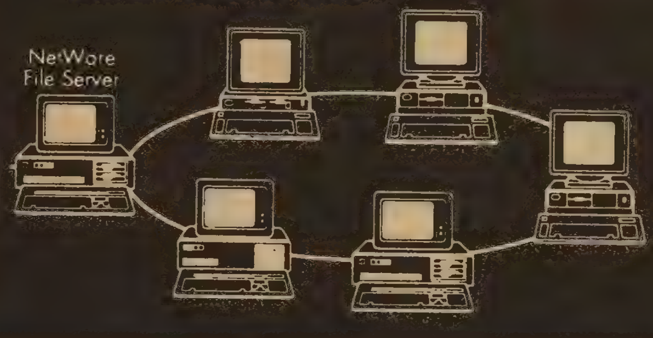

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Continued from page 94

already includes a disk light icon that gives the same information, and other utilities with this feature will surely appear if people decide they miss having that light.

Apple also chose to build one less ADB port on the back. Mostly, this means you'll have to plug the mouse into the keyboard rather than the back of the computer. The keyboard, however, still has two ports to allow you to have the mouse on the left or right.

Buyers, first-time or otherwise, should be more concerned about the Classic's lack of an expansion slot. Apple reps tell me they've found that 90% of SE owners do not use this slot. In the quest to lower production costs, therefore, Apple decided to drop it.

> Replacing the Plus and the SE, the Classic is a streamlined SE at roughly half the price. It uses the same 8MHz Motorola 68000 processor and includes many of the same features.

Time will tell if this was the correct decision, but I'm happy having the option in my SE. The two most common uses of the slot are for an accelerator board or for an external color or two page monitor. Currently these are not options for the Classic. How long will it be before someone introduces a solution? How expensive will it be?

The redesigned logic board in the Classic is roughly half the size as the SE's. It is not only smaller with fewer parts, but has circuits mounted on both sides of the board. This means, for example, that 68030 upgrade board must be redesigned to fit into the Classic. Undoubtedly when there are enough Mac Classics sold, someone will make a board to give more power and speed, but there is currently no upgrade path for this machine.

There's one other missing feature you should know about. An often overlooked, underappreciated feature of the Macintosh is the universal self-setting power supply. This means your Macintosh computer can be plugged directly into almost any outlet around the world, without worrying about finding the appropriate voltage converter. If you found yourself tranferred to Italy and wanted to take your Mac, you wouldn't need to worry about European electrical systems. (If only the coffee pot was this easy.)

The Classic (and the other new Macs) do not have this power supply; it's US house current or nothing. Granted, the majority of us will probably never need to use this feature, but traveling Mac users need to be aware of the change.

STRONG AS EVER

However, this is a true Macintosh, providing standard built-in capabilities not found in other systems. The Classic will run all Mac applications, as well as MultiFinder (when the second megabyte of RAM has been installed) to allow multiple applications to be opened concurrently. Other standard features almost taken for granted by Macintosh owners include audio-out capabilities, AppleTalk networking, and a consistent interface.

With the introduction of the Classic (and the Plus no longer in production) 1.4Mb SuperDrive floppy drives and ADB (Apple Desktop Bus) ports are standard across the entire Macintosh product line. SuperDrive is capable of reading and writing MS-DOS disks. As PCs switch to 3.5" floppy disks, SuperDrive makes file exchange a quick and smooth operation.

Standardized ADB ports let you easily change the keyboard and mouse between Macs. The rest of the ports on the back are also the same as on the SE: an external floppy disk drive port, a SCSI port, mono audio-out port as well as a printer and modem port.

The Macintosh Classic comes in two configurations. Both include a new Macintosh keyboard, a mouse, one internal 1.4Mb internal SuperDrive floppy drive, System software (currently system 6.0.7), HyperCard 2.0, training disks and a one year warranty.

The Classic 1 with 1Mb RAM has a suggested list price of $999. The Classic 2/40 with 2Mb RAM and an internal 40Mb hard disk drive has a list price of $1,499. No sooner had the Classic been announced than people began to talk about lower street prices.

The Mac Classic is Apple's lowest cost Macintosh computer, retaining all the integrity of a Mac. Everyone I've talked with is interested in the Classic: current SE owners, PC users, and prospective computer buyers. At around $1,000 this is a great computer at a great price. At a lower price—either dealer sales or student discount—who could pass this by? ■

NEW MACINTOSH LC OFFERS COLOR

The Macintosh LC is a slim, 2" high design that offers a low-cost color system. The LC includes built-in support for three monitors and supports up to 256 colors, sound input, and optional Apple IIe software compatibility. The LC comes with a microphone that allows users to record and store their voice in much the same way hand-written notes are added to printed documents. Apple is offering an Apple IIe Card that will let schools and other customers with Apple IIes continue using most of the ten thousand software programs compatible for the Apple IIe. Based on a 16MHz 68020 microprocessor, the LC comes standard with a 40Mb internal hard disk, 2Mb RAM (expandable to 10Mb), and an Apple SuperDrive floppy drive. (Base price for the LC, $2499; 12" RGB Display, $599; Apple IIe Card, $199) Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. (408)996-1010.

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It's Time For The Fourth Annual MicroTimes 100!

Once again, we're preparing our annual list of outstanding achievers in the microcomputer industry, and we'd like your help.

Many people made important contributions to the industry during 1990, but we don't know about all of them. Particularly if they don't have a diligent PR person sending us regular installments of information.

You, on the other hand, probably know about somebody who's working on a project that may yet change the world. Or someone who accomplished something great even though the TV cameras were elsewhere at the time.

We'd love it if you told us about these people so we could tell others.

We'd also love your comments on prominent industry figures, and any other remarks you'd care to make.

We'll be giving ten free subscriptions to those who respond to the poll, so if you'd like to be included in the random drawing, please make sure we have your name and contact information on your form.

Since this list will appear in our January 1991 issue, the deadline for us to receive your responses is November 30, 1990.

You can send us your suggestions by filling out this form and sending it to us via US Mail or fax. You can also send us information electronically.

We look forward to hearing from you!

—*MicroTimes editors*

Who? (Name of the person who should be on this year's list)

Where? (Company name, location, phone number, so we can contact your nominee)

Why? (What achievement makes this person noteworthy?)

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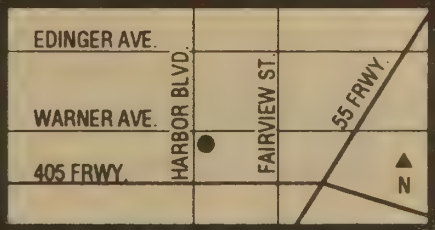

Continued from page 66

It has a publication manager to keep track of the chapters in a book.

PageMaker comes from the Macintosh environment. Like most programs of that heritage, it is gracefully graphic. You set tabs in PageMaker by clicking on a ruler. PageMaker is also more flexible in defining the shapes of included graphic objects, allowing you to flow text around the exact shape of a illustration rather than around a rectangle. Magazines demand this kind of graphic flexibility, so PageMaker has been the purchase of choice for magazine publication, and Ventura for book publication.

However, PageMaker 4 for the PC is coming. It already exists for the Macintosh, so it is more than vaporware. If the features of the Mac version are implemented on the PC, we will see all the book management features of Ventura in PageMaker 4. The combination of PageMaker graphic facilities with book management features, like multichapter indexing and table-of-contents generation, will give PageMaker 4 the best of both worlds.

PageMaker 4 also has a text processor, the Story Editor, which will let you write or revise text without waiting for an entire document to reformat after each one-character revision. Also, PageMaker documents can be exchanged between the Mac and the PC, although you must have the same fonts installed on each machine to get complete compatibility.

The choice thus tilts to PageMaker. The question that remains is whether to buy version 3.x now or to wait for version 4's rumored New Year release date. That release date has been backing away, so it might do so again and leave you with no product if you wait. But Aldus has had stiff upgrade prices—those who bought the Mac version 3 in the three months prior to the release of Mac version 4 had to pay $75 for the upgrade. Here we all must guess, since Aldus is declining comment on upgrade pricing.

With Windows 3, we can use the desktop publishing package in a common environment with word processors and spreadsheets. You can use the built-in paint and text program to build the images and copy, should you wish.

CONCLUSIONS

The software products you choose, like the hardware, should be those that work for the actual user. If you are not that user, please take the person who is with you when you shop. Users are the ones who will make it work for you, and their enthusiastic collaboration later is worth every inconvenience now.

If you have a chance to take a course in desktop publishing on the PC, do it. What you learn will assist you in making your software choices. It will certainly help you create presentable publications. Do some comparison shopping, though; some prices in the training field are outrageous, and there's a lot of variance on what you get for your money. ■

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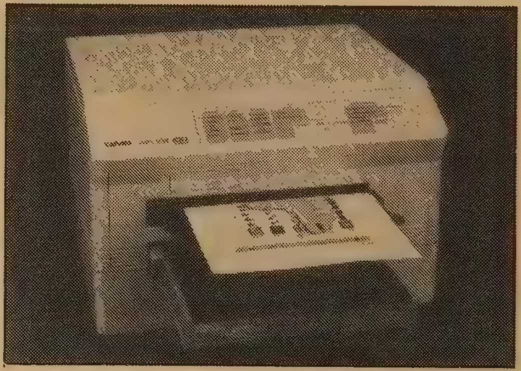

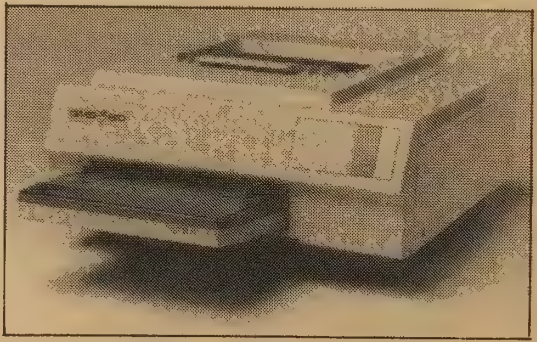

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Continued from page 77

```
DEVICE = C:\BOOTCON\BOOTCON.SYS

REM BC = [LOAD DOS SHELL
DEVICE=C:\DOS\ANSI.SYS
INSTALL=C:\DOS\SHARE.EXE
REM BC = ]

REM BC = [NORMAL SETUP
DEVICE=C:\DOS\ANSI.SYS
REM BC = ]
REM BC = [CLEAN SETUP
REM BC = ]


REM BC = [END]
```

Notice that common statements precede the BOOTCON driver. Once BOOTCON is loaded, it takes over and loads remaining statements selectively.

Although BOOTCON has no direct control over autoexec.bat, it does have a convention which can be used to control it. Statements are listed in the BOOTCON menu in the same order they appear in the config.sys file. In the menu, they are sequentially assigned a letter of the alphabet. When you select from the menu, a corresponding variable is set in the environment. That is, it is set to the same letter, A through Z, that appears next to the menu selection. For the above sample file, selecting the menu entry labeled "Normal Setup" would set this variable to "B."

Here's a sample autoexec.bat file:

```
@ECHO OFF
VERIFY ON
BREAK ON
PATH C:\;C:\DOS;C:\UTIL;C:\BAT
PROMPT $P$G
IF NOT "%BOOTCON%" == "A" GOTO NOT_A
APPEND C:\DOS\MANUAL
C:\DOS\DOSSHELL
:NOT_A

IF NOT "%BOOTCON%" == "B" GOTO NOT_B
CD C:\W5
WORD/L
:NOT_B

IF NOT "%BOOTCON%" == "C" GOTO NOT_C
REM PLACE OPTION C CODE HERE
:NOT_C
```

Continuing with the foregoing assumptions, this job would change the current directory to \W5 and start MS Word. Notice that the last entry, "C," executes no additional commands and could be simply omitted.

BOOTCON has some additional features. Password protection can be implemented to prevent users from booting from the hard disk without the proper shibboleth. If you don't choose from BOOTCON's menu, the boot defaults to the first choice automatically, so a system can still start unattended. Program code occupies just 350 bytes of memory. It's well documented, even explaining the environment in detail.

Several functions are even provided from the menu to help you make selections: online help, file viewing (for autoexec.bat and config.sys), and online configuration changes (including password) for the program itself. It's simple, low-cost, and useful. Not bad for a first effort.

LAN administrators, support departments, and others who interface with multiple protocols on a single physical network will definitely find BOOTCON useful. It's just a simple idea, but I'll bet there are even some installations where it could eliminate an extra machine or two. ■

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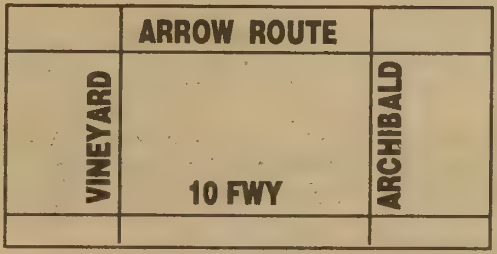

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Gift Ideas For The Amiga User On Your List

BY MATTHEW LEEDS

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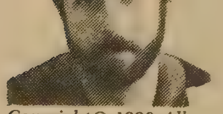

Copyright © 1990. All rights reserved. Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.

As the end-of-the-year holidays approach, traditionally we think of giving gifts. To make your shopping decisions easier, this month I'll discuss the perfect gifts for that Amigaphile you're thinking of.

MEMORY

The first gift you should consider is memory. In almost every case, Amiga users can use more RAM. Graphics intensive applications require memory, programs run faster out of fast memory, and memory has gotten much less expensive than last year.

For the A2000 owner, the Microbotics 8UPI memory board is an excellent choice. The version that accepts SIMM memory is my personal favorite. You should also consider getting a copy of Fish Disk #241, which contains the most recent version of ASDG's recoverable RAM disk. Many people prefer it to the RAD device that Commodore supplies.

For the A500 owner, a 501 or clone memory expansion card is a must-have. There are several third party cards that offer more than the 512K on the 501, but choose carefully, as some of these cards are not 100% compatible with all A500s.

If your A500 is out of warranty, you might consider having it modified to support 1MB of chip RAM. Commodore does not support this modification, but many dealers will make this minor change on out-of-warranty machines. Some user groups will also provide this service.

UPGRADES

A1000 owners would appreciate a new Denise chip to provide support for the half-brite mode if their machine does not already have this capability. Real diehard A1000 owners would really appreciate a Rejuvenator from Expert Systems. This brings much of the functionality of the A2000 to the A1000 at a reasonable cost.

HARD DRIVES

No matter what machine your gift recipients own, if they don't own a hard drive, they're working too hard.

There are excellent external units for A500 owners like Commodore's A590, GVP's Series II A500-HD+, and IVS's Trumpcard 500. Microbotics makes an excellent hard drive controller for the A2000, and Supra and Xetec still make hard drive units for the A1000.

No matter what brand of hard drive you purchase, make certain that you also give a hard drive backup utility. Some hard drives come supplied with backup software, but the best is still Central Coast Software's Quarterback.

MODEMS

If you're trying to find a parting gift for a relationship that's ending, I'd suggest a modem. Once someone gets online their free time seems to disappear. Modems are also an excellent choice for someone with too much disposable income, since the online charges can sometimes resemble the national debt of a small country.

A good choice for someone on a budget is the Supra 2400, usually available for just over $100. More expensive, but a better product, is the Supra 2400 Plus. It adds hardware error correction and data compression protocols (MNP5 and V.42bis) that improve performance on noisy phone lines and speed data transfers.

You should also get a terminal program. I've been using an ancient version of Online from Micro-Systems Software that works fine for me, but I've heard good things about a new program called Baud Bandit from PP&S. There are also quite a few shareware terminal packages worth using.

PRINTERS

If you're thinking of getting a printer as a gift, I suggest the Hewlett Packard DeskJet 500. This is an upgrade from the DeskJet+, which is itself an upgrade from the original DeskJet. They all use an inkjet cartridge that delivers 300 DPI output while using sheet paper stock.

The DeskJet 500 is selling for around $500 these days, and at that price offers a great price/performance ratio. HP is shipping the DeskJet 500 with its new water-resistant ink. This eliminates the only complaint I've had regarding their line of printers. The new ink is also now available for owners of earlier DeskJet printers, and the package includes information on a free upgrade kit for those users who have been getting shorter-than-normal ink cartridge life. The upgrade kit requires the use of the new ink and takes

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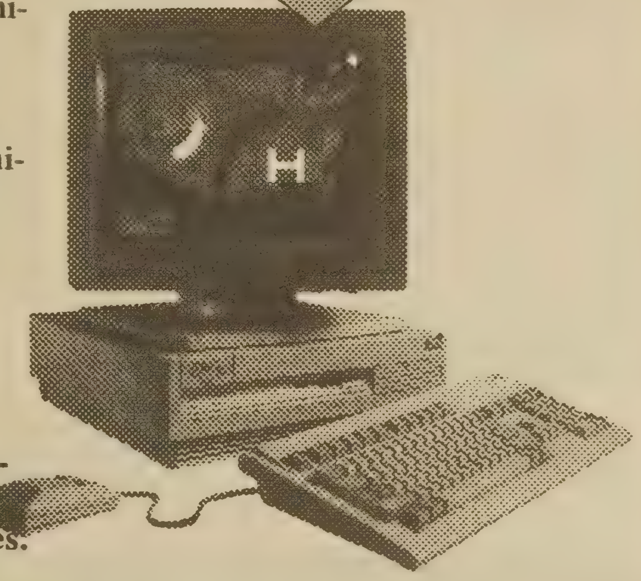

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ERGONOMIC IMPROVEMENTS

For pure comfort you might consider several ergonomic additions to your Amigaphile's work environment. An optical mouse such as the Boing Mouse lightens the load and may reduce the likelihood of repetitive motion injury. A monitor stand or arm will make the custom placement of the monitor easier, lessening the strain on eye and neck muscles. An oversized mouse pad placed under an Amiga 2000 or 3000 will help cut the acoustical pollution from the fan and hard drive.

SOFTWARE

Then, of course, there's always software. A paint package like Deluxe Paint III or DigiPaint 3, an image processing program like The Art Department or Pixmate, or a text editor like CygnusEd Professional. A disk and file management program like DiskMaster, an audio editing program like AudioMaster, or a word processing package like ProWrite 3.1.

And then there are games: SimCity, Balance of Power, Shanghai, Battle Chess, Ishido, AREXX. It's not hard to find something that would warm the heart of an Amiga addict.

GIFT CERTIFICATE: GOOD FOR VAPORWARE

You might also consider a gift certificate good at your local Amiga dealer. Sometime early next year it seems likely that AmigaDOS 2.0 upgrade kits will become available for non-3000 machines. Since neither price nor availability has been announced yet, the exact denomination of the certificate can't be predicted, but I do suggest that the upgrade will be the single most valuable gift you could supply to a long-term Amigaphile. ■

Modems are also an excellent choice for someone with too much disposable income, since the online charges can sometimes resemble the national debt of a small country.

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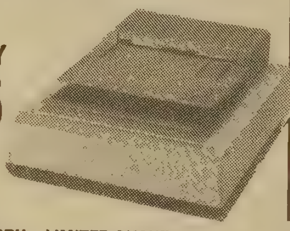

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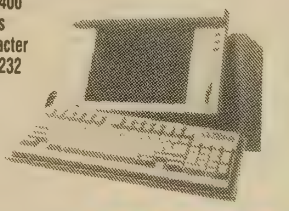

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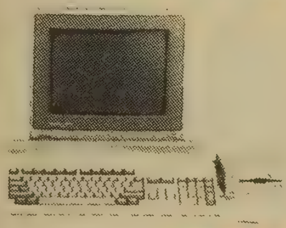

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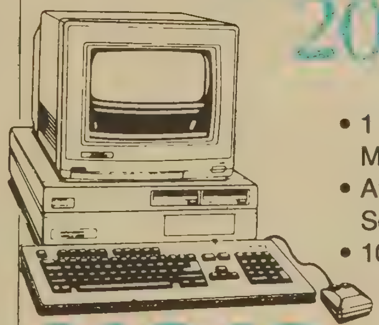

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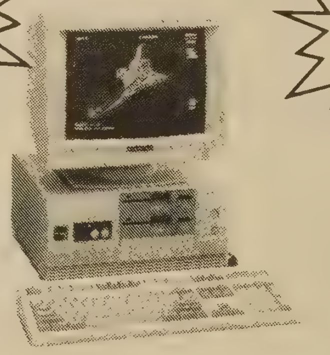

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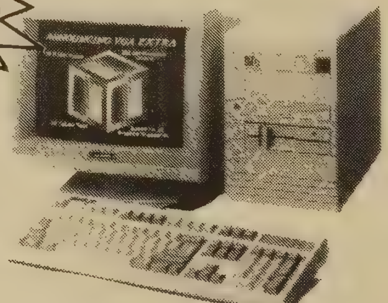

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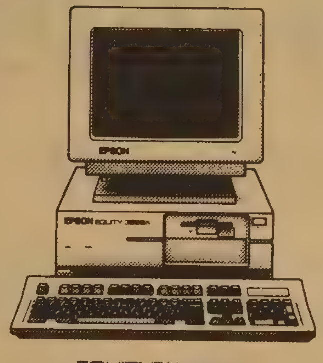
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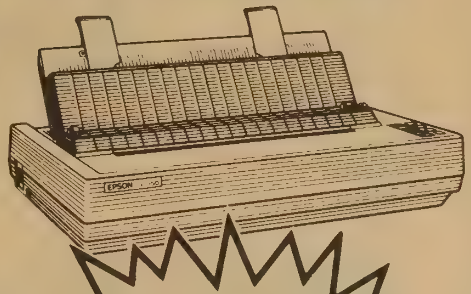

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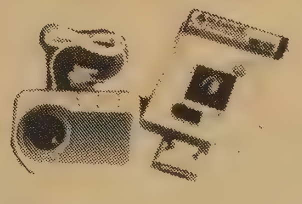

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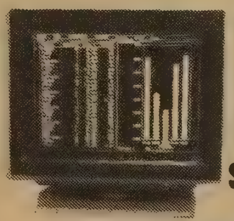

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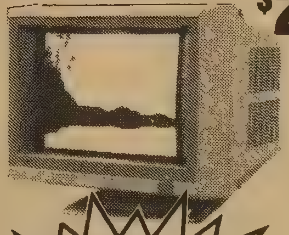

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ATARI ST

Interested in the desktop publishing business, but short on cash? How about a top-of-the-line setup for under $3,000?

Just pick up an Atari Mega4, an Atari SLM 804 Laser Printer, and a copy of Calamus, a powerful, full-featured software package. With those three items you should be able to turn out work as good as that done on $10,000 systems.

Such a system is available as a package deal from some dealers. If you've already got an Atari, you can get more information about Calamus from ISD Marketing, PO Box 3070, Markham Industrial Park, Markham, Ontario, Canada L3R 6G4, (416)479-1880.

SO HOW GOOD IS CALAMUS?

Calamus offers a full range of the features required for top-quality DTP, and the interface is very well arranged. There are a few main icons; when you click on them, a submenu of icons appears. A help line explains each icon as you move the cursor to it—one of my favorite features.

Depending on your publication needs, you might well be able to do whatever you require without buying Atari's more powerful Mega models. I have a standard Atari ST 1040, with just 1Mb of RAM, and Calamus ran just fine for short documents a couple of pages long. Large or extremely complex projects probably need more; in any case, like all desktop publishing programs, it works faster if there's more memory available.

Copyright © 1990 by David Hawkins. All rights reserved. David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco. Both monitors, an Okimate 20 color printer, and disks are all over the room.

FEATURE HIGHLIGHTS

Calamus is quite literally "what you see is what you get." You can enlarge the screen image and see every dot. In addition to a couple of pre-set magnification levels, the program lets you change that to a custom level if you'd like.

You can rotate text with Calamus, as well as import various types of graphic images. It includes a text editor as well as a macro interpreter, so you can customize your commands. It includes a dictionary for both spelling and hyphenation, and you can edit the dictionary if you want to add or delete words.

Calamus works well with several different printers. The manual advises finding a printer with a fast transfer time. The time needed to print a page may be short with some printers, but if you find yourself taking between a minute and a half hour to transmit the page to the printer, that quickly becomes the critical factor. Calamus is very fast with the Atari Laser printer, as long as you have at least 2Mb of RAM in your Atari.

You can also use an optical scanner to read in graphics images for your file. Presently Calamus works with only three scanners, but future versions will make it possible to use any model on the market.

LEARNING TO USE CALAMUS

Calamus comes with a complete reference manual that explains every item in the window and the menus. It also has a tutorial that guides you through creating your first document.

If you want even more depth, there's now a book on Calamus available. It's *The Guide to Calamus Desktop Publishing,* also available from ISD Marketing. It's a pretty good addition to the manual and adds advanced tips for folks using Calamus. It's written by Bonnie Robinson and it's ISBN 1-550-84-000-2.

THIRD-PARTY SUPPORT FOR CALAMUS

Calamus is a very well established product now. In Europe there are currently more than one hundred programs to add capabilities to the product, and some of them are being imported to the US. More will be available once they're translated from German to English.

Some of these are programs that add fonts or allow you to edit and create new fonts.

With an Atari Mega4, an Atari SLM 804 Laser Printer, and a copy of Calamus you should be able to turn out work as good as that done on $10,000 systems.

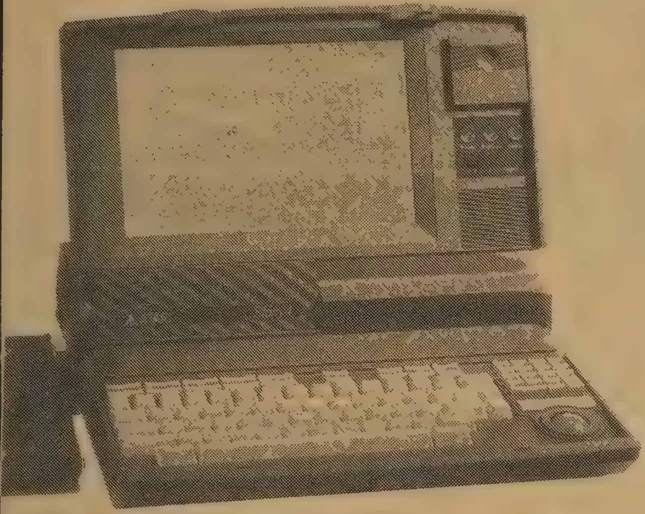
There are a lot of special printer drivers, and also programs to help you create better graphic images. You can also get disks of graphics for importing into Calamus documents.

OTHER ATARI NEWS

By the time you read this, Atari should have released the TT, an upgraded model of the machine they were planning to release last year. It's based on the 68030 chip and runs at 32MHz. It should be competitively priced, though no definite figure has been announced. The $3,000-4,000 range has been mentioned.

Rumor has it that Atari is also working on a new and cheaper laser printer. ■

Comdex Specials



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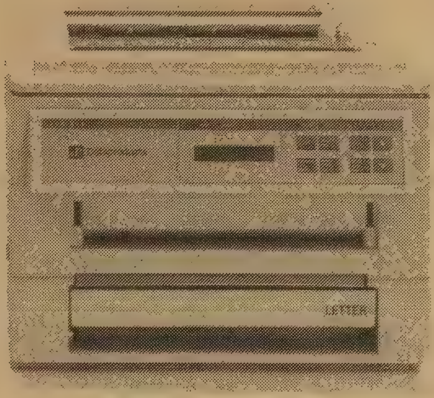
Dataproducts LZR 650 LASER PRINTER



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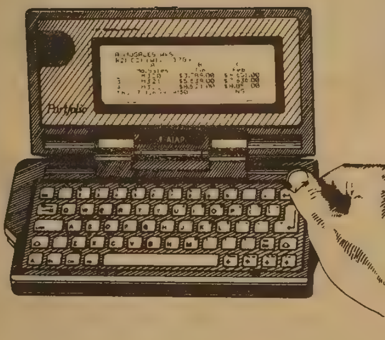
Emulation(standard)	HP PCL	HP PCL, Epson FX-80 Diablo 630, IBM plotter IBM proprinter
Footprint	2.4 sq. ft.	1.3 sq. ft.
Paper handling		
Input	50 sheets	250 sheets
Output	50 sheets	250 sheets
Additional features		
Installation Video	Not Available	Included at no charge
Remote Set-up software	Not available	Included at no charge

$999



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November 6–9 Software Quality Assurance & Testing Course. Los Angeles. Integrated Computer Systems. Call: 1-800-421-8166.

November 6–December 11 The Cutting Edge—The Latest Technologies For Electronic Music Course. Los Angeles. UCLA Extension. Call: (213)825-9064.

November 7 New Directions For MIPS RISC Seminar. Encino. Integrated Device Technology. Call: (818)981-4438.

November 7–9 Adv Informix SQL Seminar. Anaheim. AT&T Pro Development Center. Call: Brent Rusick or Jim Skvarla, (714)939-0190.

November 7–December 12 Computers For Musicians: A Hardware And Software Overview Course. Los Angeles. UCLA Extension. Call: (213)825-9064.

November 8–9 dBASE III Plus Class. Anaheim. AT&T Pro Development Center. Call: 1-800-228-0710 ext. 1996.

November 10 Computer Marketplace Show. Long Beach. Computer Marketplace. Call: 1-800-252-7927.

November 10 Computer Swap. Costa Mesa. Richard James Corp. Call: 1-800-433-7469.

November 11 Computer Marketplace Show. Buena Park. Computer Marketplace. Call: 1-800-252-7927.

November 12–13 Lotus 1-2-3 Class. Anaheim. AT&T Pro Development Center. Call: 1-800-228-0710 ext. 1996.

November 12–14 NetWare 286 System Manager Course. Los Angeles. SERVTEL. Call: (213)955-9100.

November 12–15 Second International Symposium On Electronic Art. Holland. National Institute For Computer Animation. Call: 31-(0)50-138160, Email: scan@hgrrug5 (Bitnet).

November 12–16 The 4.3BSD UNIX Kernel: Intro And Networking Class. Los Angeles. UCLA Extension. Call: (213)825-1047.

November 14 Secure Your Success In A Changing Industry Seminar. Culver City. Assoc. For Women In Computing. Call: (213)540-7027.

November 14–16 Information Engineering: Management & Implementation Seminar. Los Angeles. Technology Transfer Institute. Call: (213)394-8305.

November 14–16 UNIX Seminar. Anaheim. AT&T Pro Development Center. Call: Brent Rusick or Jim Skvarla, (714)939-0190.

November 15 Trainer's Association Of Southern California Meeting. Orange County. Trainer's Association. Call: Kitty LeSage, (714)540-6440.

November 15–16 NetWare 2.1 Update & Adv Features Course. Los Angeles. SERVTEL. Call: (213)955-9100.

November 17 Computer Marketplace Show. Pomona. Computer Marketplace. Call: 1-800-252-7927.

November 17 Computer Swap. Anaheim. Richard James Corp. Call: 1-800-433-7469.

November 18 Computer Marketplace Show. Reseda. Computer Marketplace. Call: 1-800-252-7927.

November 19–21 Reseller Authorization Course. Los Angeles. SERVTEL. Call: (213)955-9100.

November 25 Computer Show & Sale. San Diego. East-West Computer Shows. Call: (415)388-8893.

November 26–28 NetWare 386 System Manager Course. Los Angeles. SERVTEL. Call: (213)955-9100.

November 26–30 Applications Without Programming Using Alpha Four Seminar. Los Angeles. Alpha Software Corp. Call: (617)229-2924.

November 27 Windows 3.0 Seminar. Anaheim. AT&T Pro Development Center. Call: Brent Rusick or Jim Skvarla, (714)939-0190.

November 27–29 PC LANS: The Strategic View Seminar. Los Angeles. Technology Transfer Institute. Call: (213)394-8305.

November 27–30 Hands-on UNIX Systems And Applications Programming In C Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

November 29 NetWare 386 OS Features Review Course. Los Angeles. SERVTEL. Call: (213)955-9100.

November 29–30 Interactive Multimedia Seminar. Los Angeles. MacroMind. Call: (415)442-0200 ext. 225 or 222.

November 30 Advanced WordPerfect Class. Anaheim. AT&T Pro Development Center. Call: 1-800-228-0710 ext. 1996.

November 30 Intro To LAN Course. Los Angeles. SERVTEL. Call: (213)955-9100.

DECEMBER 5–7

Analyzing User Requirements

Los Angeles

Analyzing User Requirements: Bridging The Gap Between Users And Developers focuses on the sequence of steps required to obtain clear, complete and agreed-upon requirements to implement a new computer system. This seminar will offer ideas you can use to improve your system's requirements specifications. Contact: Digital Consulting, Inc., 204 Andover St., Andover, MA 01810. (508)470-3880 Fax (508)470-0526.

DECEMBER 6–8

Macintosh/LA

Long Beach Convention Center

Macintosh/LA is one of the largest Macintosh-oriented events in Southern California. Its exhibit floor and conference programs are designed to serve the corporate and professional Mac user. Participants will also receive admission to the adjacent AppleFest Conference and Expo. Contact: Peter Kimpton, (617)290-0412.

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Calendar Of Events *continued*

November 30 Word For Windows Seminar. Anaheim. AT&T Pro Development Center. Call: Brent Rusick or Jim Skvarla, (714)939-0190.

DECEMBER

December 1 Computer Swap. Northridge. Richard James Corp. Call: 1-800-433-7469.

DECEMBER 7–8

AppleFest

Long Beach Convention Center

AppleFest has sharpened its focus on educational computing this year. In addition to exhibits and demonstrations of educational technology, AppleFest will feature nearly fifty conference sessions and over twenty half-day seminars. Special events include a multimedia showcase, and demonstrations of state-of-the-art network configuration for Macintosh and Apple II platforms. Contact: Applefest '90, (617)290-0400.

December 2 Computer Show & Sale. Ventura. East-West Computer Shows. Call: (415)388-8893.

December 3–7 Automatic Object Recognition Systems Class. Los Angeles. UCLA Extension. Call: (213)825-1047.

December 4–5 dBASE Programming Seminar. Anaheim. AT&T Pro Development Center. Call: Brent Rusick or Jim Skvarla, (714)939-0190.

December 5–7 Bridging The Gap Between Users & Developers Seminar. Los Angeles. Digital Consulting. Call: (508)470-3380.

December 7–8 Interactive Multimedia Seminar. Los Angeles. MacroMind. Call: (415)442-0200 ext. 225 or 222.

December 9 Computer Marketplace Show. Buena Park. Computer Marketplace. Call: 1-800-252-7927.

December 10–11 First Annual Virtual Reality Conference. San Francisco. Multimedia Review. Call: 1-800-635-5537.

December 15 Computer Marketplace Show. Pomona. Computer Marketplace. Call: 1-800-252-7927.

December 16 Computer Marketplace Show. Reseda. Computer Marketplace. Call: 1-800-252-7927.

December 16 Computer Show & Sale. San Diego. East-West Computer Shows. Call: (415)388-8893.

December 19 Harvard Graphics Seminar. Anaheim. AT&T Pro Development Center. Call: Brent Rusick or Jim Skvarla, (714)939-0190.

December 31 Freelance Plus Seminar. Anaheim. AT&T Pro Development Center. Call: Brent Rusick or Jim Skvarla, (714)939-0190.

JANUARY

January 12–15 Mathematica Conference. San Francisco. Wolfram Research. Call: (217)398-0700, Email: conf@wri.com.

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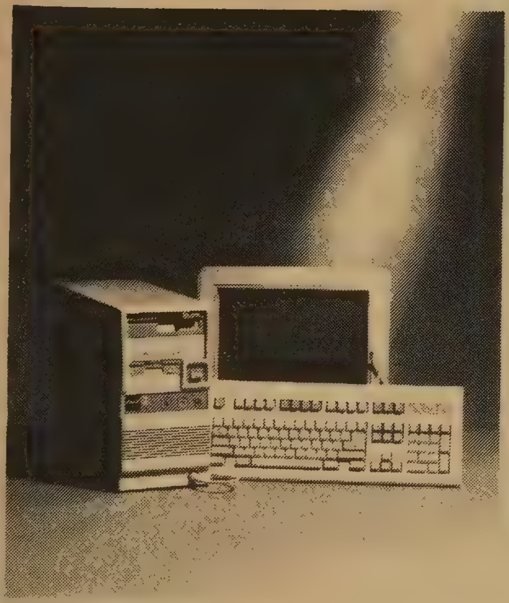

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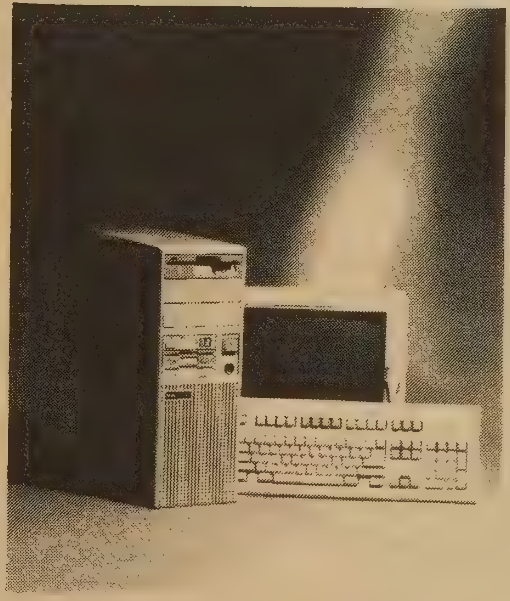

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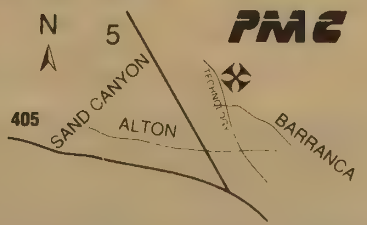

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AmigaServ BBS. (213)983-1600. 24 hrs., 1200/2400. New Downtown Long Beach prefix, same as 435-xxxx. 210Mb, multiline, C-Net, 2000+ files. Sysop: Ed Brown. [Exp. #76.]

California State University, Long Beach, CA BBS. (213)985-8737. 8-N-1, 300/1200/2400. Serving faculty, staff, students, alumni and community modem users. Sysop: Mark Bishop, [Exp. #76.]

Chess Hotline BBS. (213)436-9790. 24 hrs., 1200/2400. Latest chess news, national online chess tournaments, files of master games, WWIVnet. Sysop: Charles Rostedt. [Exp. #79.]

Compu-Net! (213)823-3609. 300/1200/2400/9600. 500Mb, 13 separate systems in one call. Adult, finance, sports, windows, occult, IBM and more. [Exp. #78.]

Drug Abuse Information (DIAMP). (213)825-3736. 8-N-1, 24 hrs., 300/1200/2400. Drug information, statistics, bibliographies, forums, email, downloads, and uploads. Free membership, reg. requested. Sysop: Greg Cason. [Exp. #77.]

Hotel California BBS. (213)422-7693. 24 hrs., 300/1200/2400. Email, forums, IBM DL's, multiuser chat, adult interest files. [Exp. #76.]

KBBS Los Angeles. (213)558-0145. 8-N-1, 300/1200/2400/9600. LA's busiest, with free 32,000 channel chat, 700Mb, 32 lines, parties, over 3000 members. [Exp. #78.]

LA Online. (213)372-4050. 8-N-1, 300/1200/2400. LA's largest online service. Local news, entertainment, info, thousands of classifieds. Free. [Exp. #76.]

La Mirada's The Modems Delight BBS. (213)944-1221. 24 hrs., 300/1200/2400. Multi-interest files, doors, games, and fun. Running PCBoard 14.5/E3 email. Sysop: Ronald Dishon. [Exp. #76.]

LAAUGLine. (213)387-1002. 24 hrs., 300/1200/2400. Amiga. Sysop: Thom Irwin. [Exp. #78.]

LAMG (Los Angeles Macintosh Group). (213)559-MACS. 8-N-1, 24 hrs., 300/1200/2400/9600. 100 megs online of Mac Rumors, news reviews, unclassified ads, discussions, observations, testimonials, and public domain software. Sysop: Reed Hutchinson. [Exp. #78.]

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Lynzie's Motherboard. (213)650-4263. 8-N-1, 24 hrs., 300/1200/2400/9600. Multi-user, group and private chats, email, public forums, local social events, over 800Mb online. Sysop: Lynzie Flynn. [Exp. #78.]

Midnight Express. (213)878-6700. 24 hrs., 300/1200/2400. Games, discussions, unlimited email, ANSI, PTS, free. [Exp. #76.]

The Backroom BBS. (213)420-7622. 24 hrs., 300/1200/2400/9600. IBM, Mac and Apple II. 1.2Gb, online games and a monthly magazine. Sysop: Byte Knight. [Exp. #78.]

The Lord's Board. (213)782-6836. 8–N–1, 24 hrs., 300/1200/2400. Public domain and shareware programs, complete KJV Bible, Christian games, IBM Utilities online calendar of events. Sysop: Paul & Agena Aziz. [Exp. #76.]

the orginal off off broadway bbs. (213)453-7038. 8-N-1, 24 hrs., 300/1200. Non-subscription, text files, messages only. [Exp. #76.]

Twelve Steps BBS. (213)653-4077. 8-N-1, 24 hrs., 300/1200/2400/9600. For members of 12 step programs such as AA, SAA, OA, ACA/ALANON, etc. Free. Sysop: Peter Rath. [Exp. #78.]

619

DataByte Computer Services. (619)367-9208. 24 hrs., Wildcat, Tomcat, USR-HST, Free, DPT Graphics. Sysop: Jim Kornegay. [Exp. #76.]

Satang BBS. (619)364-0033. 8-N-1, 24 hrs., 300/1200/2400. 170Mb online, Wildcat! IBM files & programs, religion and metaphysics. Sysop: Ed Shimko. [Exp. #78.]

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Astro Atari BBS. (714)554-4658. 24 hrs., 300/1200/2400. Atari ST & 8-bit only, 120Mb, pictures, games, utilities, DTP, Programming SIGs. [Exp. #78.]

Cash Cow BBS (N. Orange County Computer Club). (714)962-1857. 24 hrs., 2400. 4th year of operation, specialize in business, Lotus, applications. Sysop: Vance L. Jochim. [Exp. #76.]

Computer Smarts BBS. (714)777-1416. 8-N-1, 1200/2400. Conferences include real estate, Clarion software, project mangt, Q&A, more. Sysop: Mark Burrell. [Exp. #76.]

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MicroComm BBS. (714)639-7725. 300/1200/2400. Teleconferencing, 760Mb+ file transfers, international user base, newsletter, and more. Voice: General Business, (714)552-5971. [Exp. #78.]

NOCCC Club BBS. (714)730-6743. 8-N-1, 24 hrs., 300/1200/2400/9600/14440. All computers. [Exp. #78.]

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805

Y–NOT? (805)985-1657. 8-N-1, 24 hrs., 1200/2400. SW & PD fields, ads, messages. Sysop: Frank Segesman. [Exp. #76.]

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818

AEC-Online. (818)360-7022. 8-N-1, 24 hrs., Professional AutoCAD users forum, messages, ACAD specific files, chat, online ACAD help. Sysop: Lorne H. Steiner. [Exp. #78.]

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KBBS Los Angeles. (818)886-0872. 8-N-1, 300/1200/2400/9600. LA's busiest, with free 32,000 channel chat, 700Mb, 32 lines, parties, over 3000 members. [Exp. #78.]

The Drawing Board BBS. (818)965-6241. 8-N-1, 1200/2400/9600. Mac DTP, graphics, typography. Free to callers. Sysop: Char Rice. [Exp. #78.]

Tin Shack BBS. (818)992-3321. 24 hrs., 1200. The BBS for college students, faculty and new users. Sysop: Guy Nohrenberg. [Exp. #78.]

Tri-City Apple BBS. (818)288-6540. 8-N-1, 24 hrs., 300/1200/2400. Primarily Apple II, but others welcome. Email, PD, UL/DL, games. Sysop: Kris Holtzclaw. [Exp. #76.]

VICUG BBS (Valley IBM/Compatibles User Group BBS). (818)772-4227. 8-N-1, 24 hrs., 300/1200/2400. Speakers, demos, newsletter disk bank, desktop publishing, and more. Sysop: Linda Rohrbough. [Exp. #76.]

ASSOCIATIONS

PICK

Orange County Association Of Pick Professionals. Meetings: 3rd Wed., Holiday Inn, Von Karmen, Irvine. Call: (714)972-1727. [Exp. #81.]

USER GROUPS

AMIGA

LAAUG—Los Angeles Amiga Users Group. Meetings: 3rd Wed., 7:30 pm, Veteran's Memorial Auditorium, Overland Ave. & Culver Blvd. Many SIGs, Rookies, DTP, Video, Monthly PD disks. Call: Kip Hammond, (213)390-3010. [Exp. #76.]

South Bay Amiga Dudes/Dudetts. Meetings: 1st Thurs., 7:00 pm, Mercury Savings and Loan, 22939 Hawthorne Blvd., Torrance. Call: Mike Lehman, (213)370-6008 or Amiga Exchange BBS, (213)325-1796. [Exp. #79.]

South Orange Commodore Klub. Meetings: 3rd Sat., 9:00 am, Union Federal, 23688 El Toro Rd., El Toro. All Commodore and Amiga users. Call: Don, (714)830-2430. [Exp. #77.]

ATARI

NOCCC Atari ST/TT SIG. Meetings: 1st Sun., 11:00 am, Chapman College, Wilkinson Hall, rm. 221. Supporting all Atari Computers. (714)531-3090 or 957-2829. [Exp. #81.]

NOCCC Computer Club. Meetings: 1st Sun., 10:00 am, Chapman College. Supporting all Atari Computers. (714)998-8080. [Exp. #81.]

APPLE

Orange Apple Computer Club. Meetings: 1st Sat., Chemistry Bldg., Orange Coast College. Monthly newsletter, membership $25/yr. Apple II SIG meets 9-noon, Macintosh SIG meets 1-4 pm. (714)770-1865. [Exp. #81.]

USER GROUPS

Tri-City Apple User Group. Meetings: 3rd Thurs., 7:00 pm, Pasadena Central Library Aud., 285 E. Walnut St. Friendly Apple II experts, SIGs, info exchange, PD library, raffle, newsletter. Call: (213)258-0281. [Exp. #79.]

CAD/CAM

Los Angeles Area AutoCAD User Group. Meetings: 4th Thurs., except Nov. & Dec., which is 3rd Thurs., 6:30 pm, Burbank Library, 110 Glenoaks Bl. Meetings feature tutorials, Q & A's, demos and newsletter. Call: M. Berman. (818)762-9966. [Exp. #78.]

CLARION SOFTWARE

Southern California Clarion Society. Meetings: 1st Tues, 7:00 pm, 1240 N. Lakeview #120, Anaheim. Call: (714)777-2130. [Exp. #79.]

COBOL

Micro Focus COBOL & Macola Developer/User Group. Meetings: 2nd Thurs., 7:00 pm, Torrance. Speakers, demos, tips and techniques. Call: Wilson Mar, (213)539-3050. [Exp. #76.]

COMMODORE

C128 West Commodore 128 User Group. Meetings: Covina and Santa Monica. Free, no dues. Large disk library. Call: John, (818)331-1589, or Paul, (818)892-3859. [Exp. #80.]

South Bay Commodore User Group. Meetings: 3rd Thurs., 7:00 pm, Mercury Savings and Loan, 22939 Hawthorne Blvd., Torrance. Call: (213)324-8357, or BBS (213)545-8653. [Exp. #77.]

DESKTOP PUBLISHING

Southern California Ventura Publisher User Group. (SC–VPUG). Meetings: 4th Thurs., 7:15 pm. Product demos, Q & A's, library resources. Call: (818)955-5830. [Exp. #78.]

EPSON

San Fernando Valley & Los Angeles Epson QX User Group. Meetings: 3rd Mon., 7:30 pm. Supports QX-10, QX-16, PX-8, Valdocs, CM/P. Call: Dave Goldman, (818)717-1768 or 341-7632. [Exp. #76.]

IBM & COMPATIBLES

Channel Island PC Users Group. Meetings: 2nd Sat., 9:30 am, Camarillo Community Center, 1605 Burley St. Meetings feature help sessions, speakers on hardware, software, shareware, library, SIGs newsletter. Call: Bob, (805)983-4741. [Exp. #77.]

Color America, Inc., MS-DOS SIG. Meetings: 3rd Thurs., 7:30 pm, Charter Oak High School, 1430 E. Covina Blvd., Rm. B7, Charter Oak. Call: Bob Marvin, (714)861-2949. [Exp. #76.]

Greater South Bay Users Group. Meetings: 2nd Wed., 7:30 pm, Fellowship Hall, rear of Christ The Lutheran Church, 2706 W. 182nd St., Torrance. SIGs, BBS, newsletter, library and more. Call: (213)542-4996. [Exp. #76.]

Long Beach IBM PC And Compatibles User Group. Meetings: 3rd Wed., 7:00 pm, Los Altos Methodist Church, 5950 E. Willow St/Woodruff Ave., Long Beach. Call: Jim Wells, (213)439-7114. [Exp. #76.]

Orange Coast IBM-PC User Group. Meetings: Last Sat., 9:00 am, Orange Coast College, Costa Mesa. Call: Robin Clark, (714)843-2048. [Exp. #76.]

Orange County IBM-PC Users Group. Meetings: 2nd Tues., 7:00 pm, Computer Learning Center, 1240 S. State College Blvd., Anaheim. Call: Mike Lyons, (714)774-3236. Meetings feature guest speakers, sharing tips and problems, access to club library and newsletter. [Exp. #76.]

Pasadena IBM Users Group. Meetings: 3rd Wed., 6:30 pm, Caltech, Bridge bldg., rm 201. Call: Steve Bass, (818)795-2300. 3 hr. meetings have speakers on hardware and software topics including "tips and tricks," "stump the stars" and vendor demonstrations. Includes group library, newsletter, SIGs and BBS. [Exp. #76.]

SWPC User Group. Meetings: 3rd Sat., mornings, various places. Call: Christine Tripp, (213)935-4105. [Exp. #76.]

System Users Network. Meetings: 4th Sun., 4–6 pm, Gardena YMCA, 1700 Redondo Beach Blvd. Call: Victor, (213)719–8659 or Burrell, (714)891-8843. [Exp. #77.]

Valley Computer Club. Meetings: 1st Wed., 7:00 pm, Burbank Board of Realtors Bldg., 2006 W. Magnolia. Guest speakers, info sharing, software library, newsletter, BBS. Call: (818)842-3707 or (213)221-4433. [Exp. #78.]

Continued on page 142

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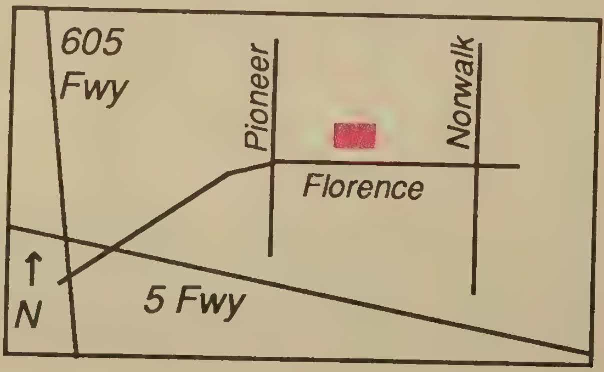

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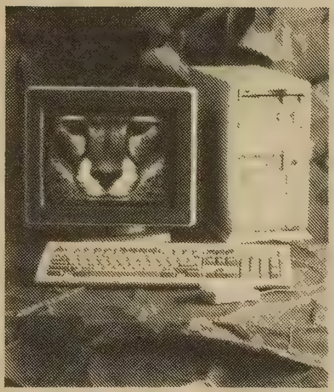

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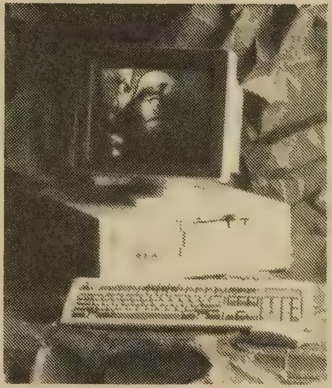

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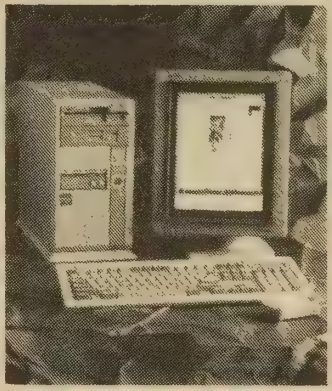

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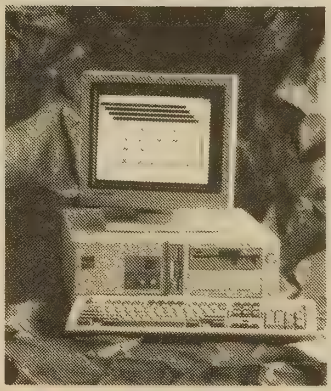

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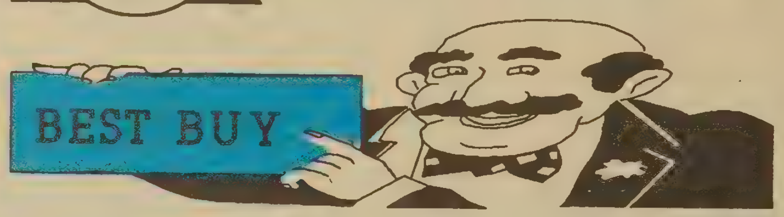

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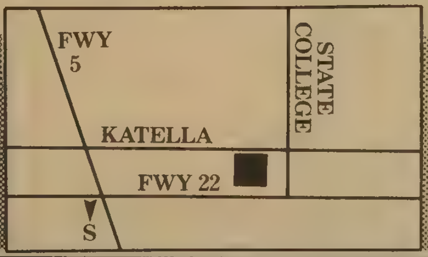

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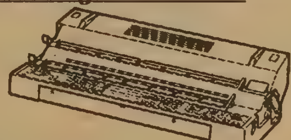

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Continued from page 134

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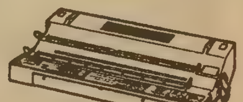

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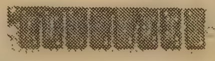

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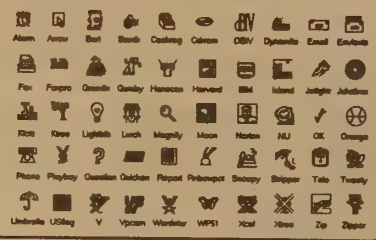

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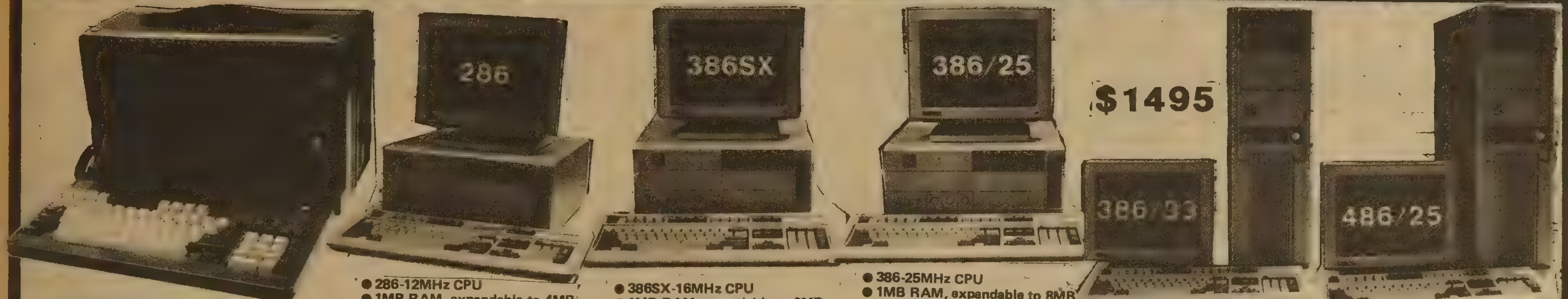

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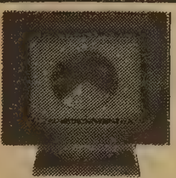

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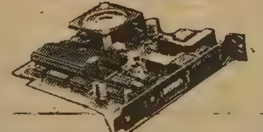

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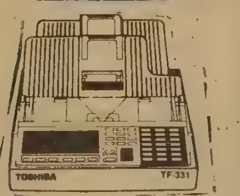

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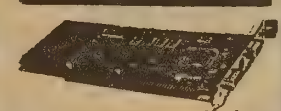

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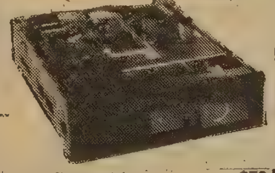

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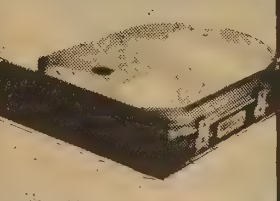

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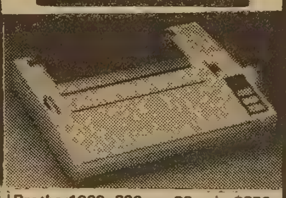
PRINTERS



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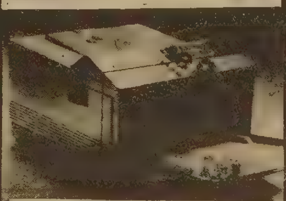

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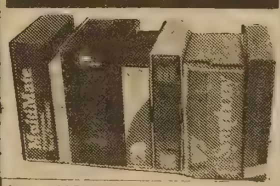

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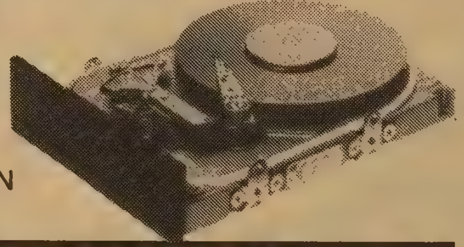

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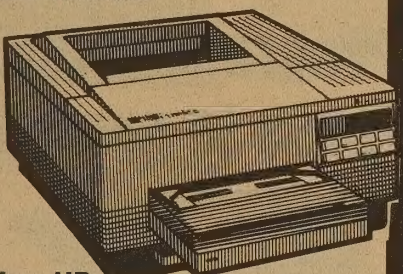

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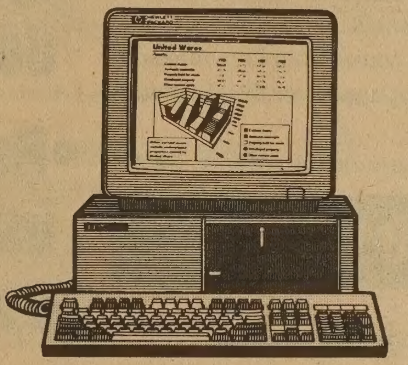

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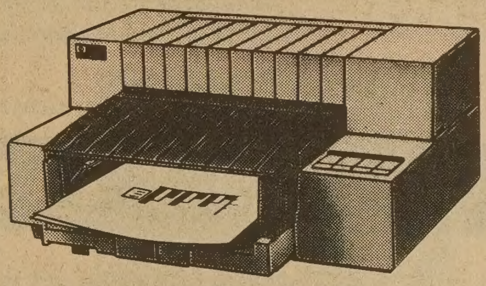

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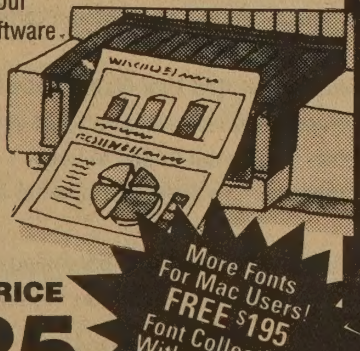

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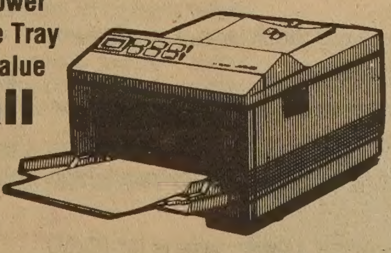

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Return Of REAL PROGRAMMERS

BY JOHN C. DVORAK

Nearly ten years ago I decided to collect from my readers a compilation of Real Programmers descriptions. A couple of them were compiled on national networks and a few magazine articles were written listing some classics. Kind of like the light bulb jokes so popular with techno-nerds, the Real Programmer game ended abruptly.

The following listing submitted by readers over the years still holds up, but things have changed. Many programmers are rich and now drive the V-12 BMW 750il to work. Some work on Windows, and that seems to warp them in new and unusual ways. I invite readers to send me [c/o MicroTimes, 5951 Canning St., Oakland, CA 94609; Fax 415/ 652-4618; UUCP microx@well.sf.ca.us; MCI/MacNET MICROTIMES] ideas for New Real Programmers.

An example of New Real Programmers comes from Cory Johnson: "Real Programmers don't really program anymore; they just cash their checks."

Here's some other ideas from readers around the country. A good list to hang from the cork board in your cubicle.

DVORAK'S LAST COLUMN

John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine *and* MacUser, *and is considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*

NEW REAL PROGRAMMERS

•Real Programmers don't wear suits and ties. And if you see one with a new haircut, sell all your stock in the company he works for—even he's noticed it's going downhill so fast that he's looking for another job.

•Real Programmers drink lots of coffee from styrofoam cups, but haven't bothered to figure out how to use the coffee maker.

•Real Programmers (women) don't like UNIX.

•Real Programmers think that "human factors" is a punk rock group.

•Real Programmers use the word "coffee" as a synonym for food.

•Real Programmers aren't ignoring you; they just don't hear you.

•Real Programmers cringe if you call them authors. A few actually get violent.

•Real Programmers do not ask users to "press any key" or make any other gratuitous decisions.

•Real Programmers have trouble suppressing homicidal tendencies when asked "ARE YOU SURE?"

•Real Programmers hate on-line documentation and prefer reference cards, or better yet, logical flow.

•Real Programmers thought that the word "hack" was a stupid term before it became associated with criminals.

•Real Programmers don't use spreadsheets. They can get the same results faster and more efficiently with BASIC.

•Real Programmers don't eat anything without a dangerously high sugar content.

•Real Programmers don't use lower case. Lower case is for (GOD FORBID) communicating with the real world.

•Real Programmers don't write perfect code. Let's face it; if it weren't for the bugs, programming would be dull.

•Real Programmers don't sleep. Their systems go temporarily down.

•Real Programmers don't use micros. If it weren't for mainframe delays there wouldn't be time to eat or use the restrooms.

•Real Programmers cannot tell time. In fact, their only concepts of time are "deadline" and "late".

•Real Programmers don't look stylish. To do so would indicate a belief in society.

•Real Programmers do their best work from 1-5 am.

•Real Programmers strive to insult users with error messages ("invalid code you twit—try again?").

•Real Programmers don't like to fix bugs in code written by someone else.

•Real Programmers adjust user specs to meet their own needs.

•Real Programmers aren't ignoring you; they just don't hear you.

•Real Programmers adjust user specs to meet their own needs.

•Real Programmers strive to insult users with error messages ("invalid code you twit—try again?").

•Real Programmers don't like standards.

•Real Programmers don't like to share computer time with users.

•Real Programmers do not have mid-life crises. Writing code that works is a perpetual crisis.

•Real Programmers must hear at least four rumors a day, else they become anemic and surly.

•Real Programmers think that *War Games* was a documentary film.

•Real Programmers have not written a letter in years. If you do not have a modem, they don't want to talk to you.

•Real Programmers can't remember the name and model of the car that they drive.

•Real Programmers spend two hours balancing their checkbooks on a computer. Using a calculator and pen would require about ten minutes.

•Real Programmers always prefer junk food.

•Real Programmers love to talk "computer-eze" while ordinary citizens are listening.

•Real Programmers don't know anyone who has a secretary.

And let's not forget this classic submitted by Donald Hand:

•Real Programmers believe that the computer has been around since the dawn of man; when Eve traded in her Apple for Adam's Wang! ■

(Thanks to Les Copeland, Kevin Q. Brown, David Keith, Joe Grande, Warren Smith, Craig Patchett and Carolyn S. Dunn for their submissions to this list.)

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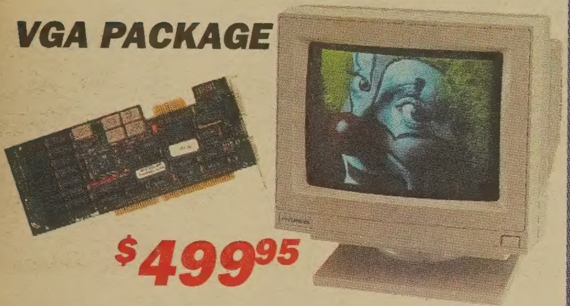

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VGA-PKG

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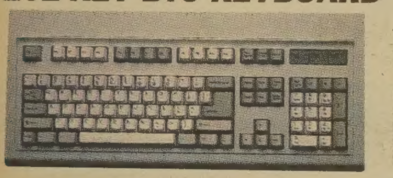

• FOR 8088, 286, 386 AND COMPATIBLES • AUTO-SENSE FOR 8088 OR 286/386 • AUTO-REPEAT • EXTRA LARGE SHIFT AND RETURN KEYS • LED INDICATORS FOR SCROLL, CAPS AND NUMBER LOCK

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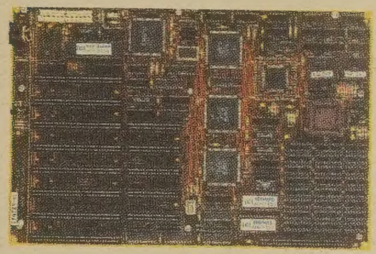
N-3.5DS BULK 3 LBS. 720K 3-1/2" DS/QD DISKS	1.19 EA	.99 EA

YOUR MOTHERBOARD CONNECTION!



16MHZ MINI 386-SX $399.95

• NORTON SI 15.3 • LANDMARK AT SPEED 20.8

• USES 16MHZ INTEL 80386SX CPU • EXPANDABLE TO 8MB ON BOARD • 512K/1MB USING 18/36 256KX1 DRAMS OR 2/4 256K SIPS OR 4/8 256KX4 AND 2/4 256KX1 DRAMS; 2/4MB USING 18/36 1MBX1 DRAMS OR 2/4 1MB SIPS; 6/8MB USING 36 1MBX1 DRAMS AND 2/4 1MB SIPS AMI BIOS • CHOOSE FAST Ø WAIT STATE OR 1 WAIT STATE FOR ECONOMICAL USE OF SLOWER RAM • FIVE 16-BIT & THREE 8-BIT EXPANSION SLOTS • CHIPS & TECHNOLOGY NEW ENHANCED ADVANCED TECHNOLOGY (NEAT) CHIPSET • SOCKET FOR 80387SX-16 COPROCESSOR • 8.5" X 13" SIZE FITS IN MINI-AT AND FULL-SIZE AT CASES

MCT-386SX

"FASTEST NON-CACHING BOARD WE TESTED" BYTE MAGAZINE, APR 90

MINI 25MHZ 386 $799

• NORTON SI 26.6 • LANDMARK AT SPEED 30.1

• MEMORY INTERLEAVING FOR NEAR ZERO WAIT STATES • SOCKETED FOR 80387 COPROCESSOR • USES 80NS 256K OR 1MB SIP/DIP RAMS • 16MB RAM CAPACITY: 8MB ON BOARD, 8MB USING OPTIONAL RAM CARD (ØKB INSTALLED) • ON-BOARD RAM: 1/2MB USING 4/8 256K SIPS OR 4/8MB USING 4/8 1MB SIPS • FIVE 16-BIT SLOTS, TWO 8-BIT SLOTS, ONE 32-BIT SLOT FOR PROPRIETARY RAM CARD • STANDARD XT HOLE SPACING • AMI BIOS • SIZE: 8.5" X 13"

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• NORTON SI 30.5 • LANDMARK AT SPEED 40.7

• 25MHZ 80386 • INCLUDES RAM CARD (LISTED BELOW) • FEATURES INTEL 82385 CACHE CONTROLLER • AMI BIOS • CHIPS & TECHNOLOGY CHIPSET • INCLUDED 32-BIT RAM CARD ALLOWS MAXIMUM FLEXIBILITY IN SELECTING FROM 1 TO 16MB RAM (ØKB INSTALLED) • SHADOW RAM LETS YOU COPY ROM BIOS INTO FAST 32-BIT MEMORY • SOCKETED FOR 80387 OR WEITEK 3167 COPROCESSORS

MCT-C386-25 ....$1199.00
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MEMORY CARD

1/2/4/8/16 MB USES 256K OR 1MB SIMM MODULES (ØKB INSTALLED)

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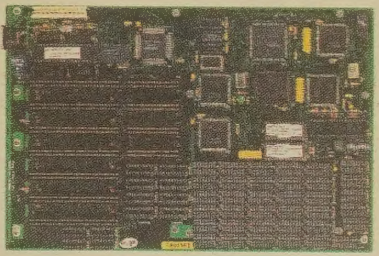


12.5MHZ 286 $199.95

• NORTON SI 14.3 • LANDMARK AT SPEED 16.5

• AT-COMPATIBLE • 6/12.5MHZ KEYBOARD SELECTABLE SPEEDS • EXPANDABLE TO 4MB ON BOARD; 512K/1MB USING 18/36 256KX1 DRAMS; 2/4MB USING 18/36 1MBX1 DRAMS (ØKB INSTALLED) • MEMORY SPEED: 120NS FOR 1 WAIT, 100NS FOR Ø WAIT

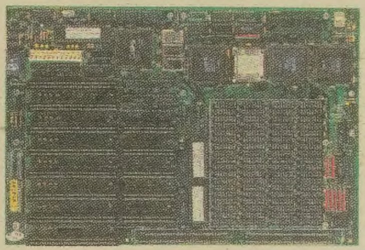
MCT-M286-12

10MHZ 8088 $99.95

• NORTON SI 2.1

• NOW USES LOW-COST 256K X 4 1MB DRAMS • XT COMPATIBLE; OPERATES AT 4.77/10MHZ • KEYBOARD SELECTABLE CLOCK SPEEDS • SOCKET FOR 8087-1 CO-PROCESSOR • 8 SLOTS • MCT BIOS • 640K RAM CAPACITY (ØKB INSTALLED)

MCT-TURBO-10



20MHZ 286 $389.95

• NORTON SI 20.3 • LANDMARK AT SPEED 26.3

• NEAT CHIPSET HAS POWER TO COMPETE WITH 386 SYSTEMS • EXPANDABLE FROM 512K TO 8MB; 512K/1MB USING 18/36 256KX1 DRAMS OR 2/4 256K SIPS; 2/4MB USING 18/36 1MBX1 DRAMS OR 2/4 1MB SIPS; 6/8MB USING 36 1MBX1 DRAMS AND 2/4 1MB SIPS • 20/10MHZ KEYBOARD SELECTABLE SPEEDS • AMI BIOS • SHADOW RAM AND PAGE INTERLEAVED MEMORY • FAST Ø WAIT STATE OR 1 WAIT STATE FOR SLOWER RAM • 8.5" X 13" FITS MOST XT, MINI-AT & FULL SIZE AT CASES• FIVE 16-BIT & THREE 8-BIT SLOTS • SOCKET FOR 80287-12 MATH CO-PROCESSOR

MCT-M286-20N

16MHZ 286 W/NEAT CHIPSET $289.95

• 16/10MHZ SELECTABLE SPEEDS • USES 80287-10 MATH CO-PROCESSOR

MCT-M286-16N ***NORTON SI 16.2 / LANDMARK AT 21.1***

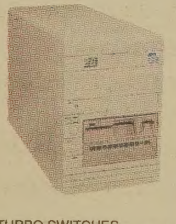
12MHZ 286 W/NEAT CHIPSET $269.95

• 12/8MHZ KEYBOARD SELECTABLE SPEEDS • USES 80287-8 MATH CO-PROCESSOR

MCT-M286-12N ***NORTON SI 12.0 / LANDMARK AT 15.5***

CASES

MINIFOOT™ $199.95



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intel®

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8087-1	10 MHZ	169.95

16-BIT CO-PROCESSORS

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FOR COMPAQ LTE/286, TANDY 2800
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80387-20SX	16 MHZ	399.95	80387-33	33 MHZ	649.00

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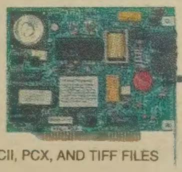

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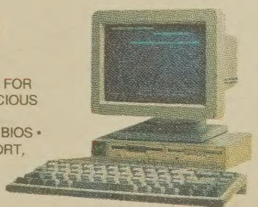

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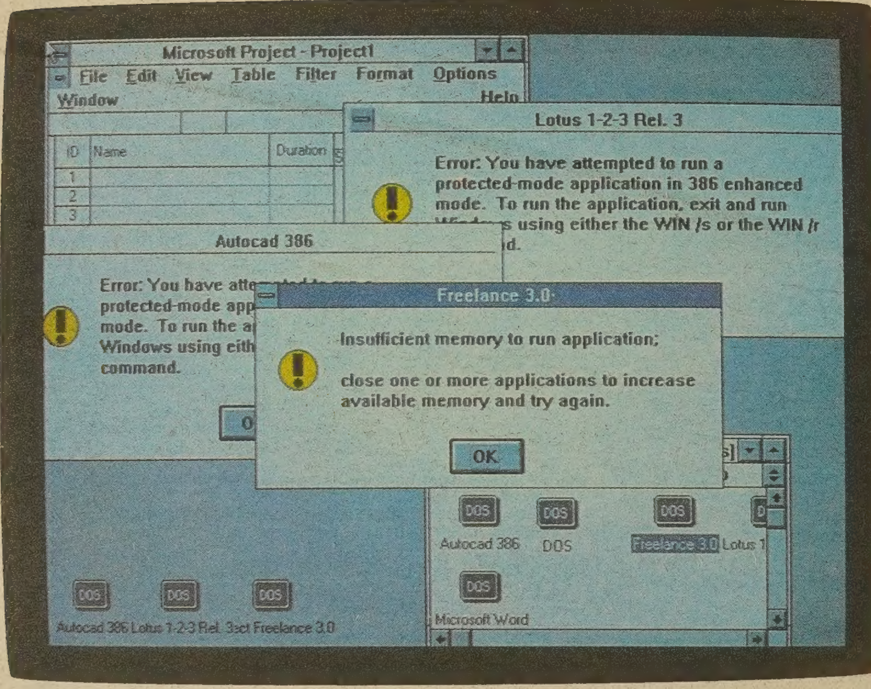
Is Windows 3.0 the end of DESQview™?

Not if you're still using DOS programs.


Microsoft Project - Project1
File Edit View Table Filter Format Options Window Help
ID Name Duration
Lotus 1-2-3 Rel. 3
Autocad 386
Freelance 3.0
OK
Autocad 386
DOS
Freelance 3.0
Lotus 1
Microsoft Word
Autocad 386 Lotus 1-2-3 Rel. 3ect Freelance 3.0

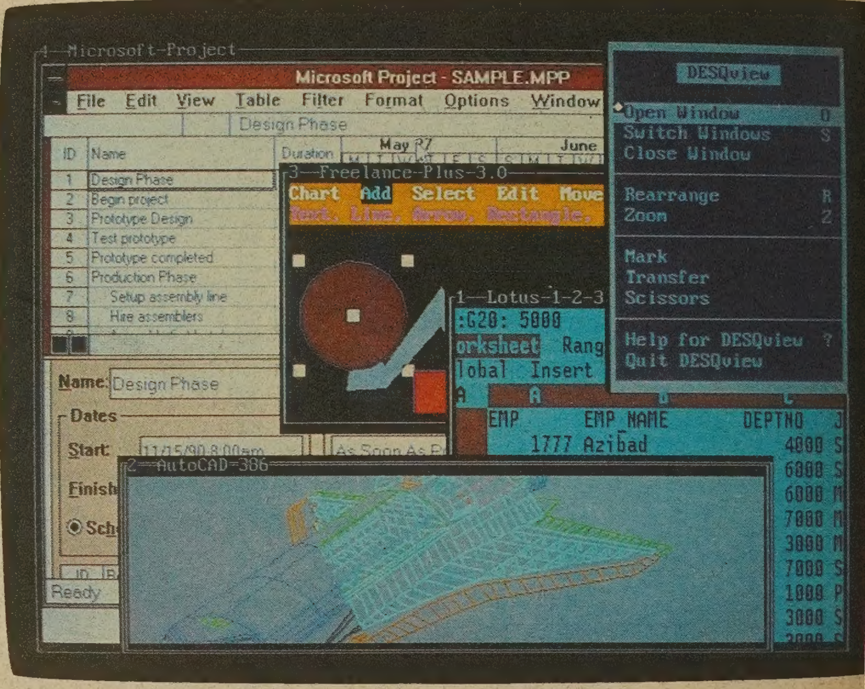
Error: You have attempted to run a protected-mode application in 386 enhanced mode. To run the application, exit and run Wi...s using either the WIN /s or the WIN /r ...d.

Error: You have atte... protected-mode app... mode. To run the a... Windows using eith... command.

Insufficient memory to run application;

close one or more applications to increase available memory and try again.

Windows 3.0. The multitasking, windowing environment.


1—Microsoft-Project
Microsoft Project - SAMPLE.MPP
File Edit View Table Filter Format Options Window
Design Phase
ID Name Duration May 27 June
1 Design Phase
2 Begin project
3 Prototype Design
4 Test prototype
5 Prototype completed
6 Production Phase
7 Setup assembly line
8 Hire assemblers
Name: Design Phase
Dates
Start: 11/15/90 8:00am
As Soon As P
Finish
Sch
Ready
3—Freelance-Plus-3.0
Chart Add Select Edit Move
Text, Line, Arrow, Rectangle,
1—Lotus-1-2-3
:G20: 5000
orksheet Rang
lobal Insert
EMP EMP NAME DEPTNO
1777 Azibad 4000
6000
6000
7000
3000
7000
1000
3000
2—AutoCAD-386
DESQview
Open Window O
Switch Windows S
Close Window
Rearrange R
Zoom Z
Mark
Transfer
Scissors
Help for DESQview ?
Quit DESQview

DESQview 386 2.3. The multitasking, windowing environment.

Are you still using MS-DOS programs on your PC?

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The new DESQview 2.3 and DESQview 386 2.3 let you use your favorite DOS and DOS-extended programs in windows side-by-side on 80286, 80386 and i486 PCs. As you can see above, you can even run Windows programs within DESQview 386. So the next time you get error messages like the ones at the left in Windows, remember how the same set of programs look running in DESQview.

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This comparison was made using a system like the one you might run: Both shots show an ALR FlexCache 33/386 running DOS 3.3 with VGA display adaptor, Novell NetWare v3.01 Rev. A, with IPX/SPX v3.01 Rev A, Microsoft Mouse 7.00, and Microsoft SMARTDrive v3.03 disk cache. Buffers were set to 20. For the Windows screen, we ran Microsoft Windows 3 HIMEM.SYS and EMM386.SYS. For the DESQview screen, we ran QEMM 386 v5.1.

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